

# Handling & Shipping

## ILLUSTRATED

December 1960 / January 1961

# WHAT

## can you

## learn

## from a

## blue chip

## company?

PAGES 13-19

**Piggyback — a revolution American shippers can no longer ignore**

PAGE 20

**How to lick your storage space shortage**

PAGE 23

**Handling equipment users report on savings**

PAGE 24

**Air Freight — surprise bargain comes of age**

PAGE 27

**New container concept cuts bulk handling costs**

PAGE 30

*ideas* IN MATERIAL HANDLING

*ideas* IN TRANSPORTATION MANAGEMENT

*ideas* IN PACKAGING & PACKING

*ideas* IN WAREHOUSING

HANDLING & SHIPPING ILLUSTRATED  
812 HURON ROAD • CLEVELAND 15 • OHIO

AN INDUSTRIAL PUBLISHING CORPORATION MAGAZINE

# ALLIS-CHALMERS LIFT TRUCKS

## keep *Moving* and *Paying* at *Vendo*



Vendo is one of the world's largest producers of vending machines. Obviously, many of its products are pressed into service without ever leaving the plant. The Allis-Chalmers lift truck is one of 14 in use at this plant.



Operator John Cromer reports, "I like the way an Allis-Chalmers lift truck performs. I like the transmission. I like the way it handles. I just like the whole machine!"

Four years ago, The Vendo Company put an Allis-Chalmers lift truck to work in its Kansas City, Missouri, plant — and discovered there is a dollar-saving difference in lift trucks. As Clyde Hickman, material handling foreman, said then, "A lift truck has to keep moving or you lose money, and ours keep moving."



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Clyde Dent, mechanic, says, "maintenance expenses are low."

Let your Allis-Chalmers dealer show you how these tough trucks will keep going, and paying, on your job. Ask for a demonstration. Allis-Chalmers, Milwaukee 1, Wisconsin.

# ALLIS-CHALMERS

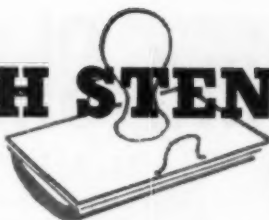


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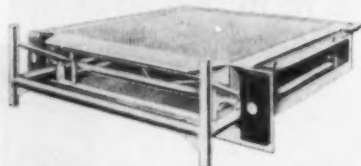
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# Handling & Shipping ILLUSTRATED

ESTABLISHED IN 1952 AS MATERIAL HANDLING ILLUSTRATED

VOL. 9 No. 6

DECEMBER 1960/JANUARY 1961

## FEATURES

How management views handling-packaging-shipping	13
The handling robot at the record center	14
Taking the damage out of shipping	16
Packaging—key to small parts handling	17
Smart warehousing needs just half the space	18
Material handling and the modern freight terminal	19
Piggyback—a revolution American shippers can no longer ignore	20
How to lick your storage space shortage	23
Handling equipment users report on savings	24
Air freight—surprise bargain comes of age	27
New container concept cuts bulk handling costs	30
VIP's comment on controversies	32

## DEPARTMENTS

Dateline Washington	4
Developments to watch	6
New products	10
It's the law	34
Useful literature	44
People in the news	47
Advertisers' index	48

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# DATELINE WASHINGTON

## **Congress to be transport-minded**

The Eighty-seventh Congress will give far more attention to transportation when it convenes in January than its predecessor did in the politically-charged sessions this past year. The worsening profit picture will bring appeals from all segments of the industry for some form of relief. This sets the stage for an all-out slugfest between the common carriers for legislation favorable to their particular mode.

Railroad selective rate cutting practices will come under new attack from truckers and water carriers. Barge lines are busily gathering support for a measure introduced by Sen. Yarborough (D-Tex.) this year that would apply antitrust principles to railroad rate-making. Under the Yarborough bill, which follows the Robinson-Patman Act concept, a railroad that cuts its rates in one area to take traffic away from a competing carrier would be required to make the same rates available to shippers over its entire system.

Truckers and water carriers charge that ICC is ignoring Congress' mandate to eliminate unfair or destructive competitive practices. Their viewpoint is getting substantial support from Senate Commerce members Engle (D-Calif.) and Monroney (D-Okla.). ICC itself has done little to clarify its position. Under Congressional prodding last summer, Chairman Winchell made several halting attempts that shed little light on ICC policy in interpreting the controversial section of the Act. But more recently the Commission has taken the position that no policy statement is possible "in view of the complexity of adjudication in rate decisions."

Chances of the next Congress applying the brakes to railroad rate-making practices, however, are somewhat slim. Heart of the issue is the general confusion among carriers and shippers—and within ICC itself—over interpretation of Sec. 15 a (3) of the Interstate Commerce Act. The railroads claim this gives them a free hand and, on the basis of its rate decisions the past two years, ICC seems inclined to agree.

## **Kennedy, government, and regulations**

President-elect Kennedy's pledge to free the railroads from "burdensome government regulation" is easier said than done. Sen. Magnuson (D-Wash.), chairman of the Senate Commerce Committee, has already made it clear he opposes singling out the railroads for favored treatment. If regulation is burdensome, says Magnuson, all modes of transportation should be treated equally in any proposal to lift such burdens. He implies that Congress, not the White House, will decide what, if anything, should be done.

Predictions that Congress will reduce regulations affecting transportation are premature. The Transportation Act of 1958 and a Dept. of Commerce study released this year are cited as evidence to substantiate

the theory that the government will loosen its reins. But there are signs that some legislators are having second thoughts about the 1958 Act, and the Commerce study, so far, has received only scant attention.

Government regulation—how much and what kind—is a topic that will get considerable space in the Doyle Committee report due Jan. 31. This group is also expected to make recommendations on the imposition of user charges, common ownership, and federal policy on railroad mergers. It is doubtful, however, that the report will get down to what many consider the crux of the regulatory problem: how to give the railroads more freedom and, at the same time, ensure the continued development of a balanced national transportation system.

## **Common ownership battle shapes up**

Railroads will step up their campaign for Congressional sanction of common ownership. It's highly unlikely, however, that a Democratic Congress will view with much enthusiasm their proposals to expand into the fields of air, truck, and water carriers.

The ICC examiner's decision in the John I. Hay case is expected before the end of the year. There is a feeling here that the Commission will approve purchase of the Hay barge line by the Southern Pacific and Illinois Central. Congress may then let the barge lines and railroads fight the issue out in the courts before it takes any action on common ownership.

## **Studies call for ICC changes**

Reorganization of ICC and other Washington regulatory agencies will be pushed by the new Administration. Complaints increase over the snail's pace at which ICC, Civil Aeronautics Board, and Federal Maritime Board move in rate and merger cases. These are reflected in two recently completed studies—one by a special committee of lawyers and transportation experts appointed by ICC; the other by an independent management firm for the Bureau of the Budget.

The ICC Special Committee report is highly critical of the agency's failure to shape transportation policy, and its inconsistent decisions in similar cases. All 11 ICC commissioners, it notes, are overburdened with administrative details. Recommendation: centralize all administrative functions in a new office of executive commissioner.

The Budget Bureau study charges that the agency's ten bureaus "suffer from conflicting rationales." It also criticizes the agency for not making sufficient use of electronic data processing for statistics and paperwork. The report recommends that ICC chairmen be elected for three-year terms and charged with total management responsibility. It also suggests that ICC

be reorganized in three major divisions: one to grant operating rights, another to act on rates and carrier practices; and a third to handle mergers and other financial matters.

The study that will have the greatest impact on Congress, however, is still underway. This one is being conducted by the General Accounting Office and is expected to lay the groundwork for a wide scale Senate Commerce Committee probe of the regulatory agencies next year. Actually, no new legislation is needed to bring about the organizational changes Committee Chairman Magnuson feels are needed to overcome what he terms "regulatory lag." But Magnuson warns he'll ask Congress to act if ICC stalls on the committee's forthcoming recommendations.

### **Pending on Capitol Hill**

Waterway tolls will get only scant consideration in Congress. Railroads will continue to press Congress to levy user charges on their competitors. But with some of the nation's largest shippers backing up the barge lines, they'll be outgunned on this issue.

Truckers may not be as fortunate. Two long-awaited Dept. of Commerce studies are due in January. One will attempt to allocate cost of highway construction among various users. The other will detail the effect vehicle weight and size have on highways. Both will carry considerable weight on Capitol Hill, where the thorny problem of financing the federal interstate highway program will have to be thrashed out again next year.

### **Loan guarantees to get new life**

Look for Congress to extend the railroad loan-guarantee program next year. The present law, passed in 1958 to help the railroads, expires March 31. So far only \$71 million of the \$500 million in guarantees authorized by Congress have been approved by ICC. Any extension is unlikely to increase the limit, but may ease conditions attached to getting loan guarantees.

### **Trucks want to carry mail**

Truckers will make a strong bid in Congress next year for a substantial share of the Post Office's business. Under current law they are prohibited from competing for the traffic on the same basis as the railroads. The Post Office, impressed with the truckers' performance during the recent Pennsylvania Railroad strike, is supporting the move. It has, in fact, already drafted legislation that would permit any common carrier to haul the mail once certified by ICC. Railroads, who thus far have been unable to block the PO from shifting first class mail to air transport, will oppose vigorously.

### **Signs of the times**

Gross revenues of regulated intercity truckers, which are expected to rise to about \$8 billion this year, may top Class I rail revenues for the first time. . . . Federal Maritime Administrator Wilson says he is already drafting plans to ask Congress for funds for a second atomic merchant ship.



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## DEVELOPMENTS TO WATCH in traffic management

### New name for Railway Express

After 121 years, the name Railway Express is no more. Railway Express Agency, Inc. becomes REA Express. This is the new name for all the firm's domestic and international shipping service and allied services. It will appear on company trucks, buildings, etc. Behind the change is the ever-more-obvious fact that "railway" is only part of the whole operation today. Look for the familiar red diamond to go soon too.

### ATA to probe unregulated carrier blight

A main topic at American Trucking Associations' convention in New York was how to curb unregulated trucking that falls outside the definition of private carriage. A thorn in the side of modern transportation, it has been getting larger, not smaller, in spite of State and Federal attempts at control.

### Piggyback trailers getting longer

Included in Piggyback Leasing Corp.'s recent \$3/4 million order to Highway Trailer Corp. were 100 40-ft piggyback trailers. Worth noting that this company previously had limited its trailers to 35 ft. (See "PIGGYBACK," p. 20.)

### Examiner report favors ECMCA

The Eastern Central Motor Carriers Association won the first round of its battle against Piggyback Plan 3 and 4. ICC examiner found in the hearing (*ECMCA v. Baltimore & Ohio RR et al.*) and seven embraced cases that Plan 3 and 4 rates are unjust, unreasonable, and unlawful. Final decision will come from ICC. Look for a long, drawn-out controversy.

### Mergers and proposed mergers continue

Illinois Central RR has asked for stock control of the Louisville & Nashville. Trans World Airlines is reported seeking to merge with Northwest, and United Truck Lines of Spokane has merged with Buckingham Freight Lines, Rapid City, S. D.

### TAA to create research foundation

Transportation Association of America will create a National Transportation Research Foundation to seek means of stimulating more research. This action approved by TAA's board of directors at their recent meeting in Ponte Vedra, Fla.

### Pacific Northwest port probe by FMB

The Federal Maritime Board in its order 917 has begun a probe into practices of the ports of Seattle and Portland. Main topic under question is free time and storage for commodities.

### RR's call Ex Parte 223 freight boost modest

The rails claim the latest Ex Parte 223 calls for a modest increase to cover accessory charges and to include various exceptions to commodities. Along with this they propose an increase of 1/2 cent

per cwt in rates 65 cents and under, and 1 cent in rates of 65 cents per cwt or more. This will boost revenues about \$148 million a year, but rails say their expenditures have gone up to about \$607 million a year, and that they'll still be in the red.

### **Small shippers criticize NCB**

The National Small Shipments Traffic Conference has asked its classification committee to oppose the National Classification Board in its procedures to reshuffle the rules in NMFC. They claim shippers didn't get enough time to study the changes or enter appeals.

### **Six RR's to lease Chicago trackage**

ICC has allowed applications by six operating railroads for trackage rights and other authority they need to serve public warehouses, elevators, docks, and piers in the Regional Port District of Chicago. The railroads are Pennsylvania; Illinois Central; Chicago, South Shore & South Bend; Belt Railway; New York Central; and Indiana Harbor.

### **Plan 5 piggyback gets examiner OK**

ICC examiner in a hearing to test lawfulness of Joint Rail Motor Plan 5 has rendered a favorable report. Mainly involved were moves between Long Island points and Central Territory. He found the rates reasonable and compensatory, and not likely to result in destructive competition.

### **Traffic men warned to increase their skills**

Modern methods may catch TM's napping, members of Associated Traffic Clubs of America heard at their annual meeting recently. They must increase their skills and broaden their knowledge or see their role in industry dwindle. Their background, they were warned, should include warehousing, production, marketing, and law.

### **West Coast carriers again pioneer innovation**

West Coast carriers are advocating a new form of billing. They were the first to run diesel trucks and bouble bottoms. Now they recommend a combined bill of lading and freight bill. They're already trying it out in some areas. Purpose is to cut out some of the paperwork in shipping. Shippers are enthusiastic. (Look for a comprehensive report in H&SI soon.)

### **Insurance Co.'s push for plant traffic safety**

Liberty Mutual Insurance Co. offers a series of studies on rail crossings and rail equipment in plant areas. Much of the contents is directed to traffic men responsible for intra-plant transportation.

### **U.S. execs see Soviet rail gains**

In their recent tour of the Soviet rail system, the U. S. inspection team had to admit that the Russians have advanced further than most experts here think. They could well overtake us soon at their present rate of improvement, although we are still far ahead.

### **Movers Conference proposes improvements**

The president of the Movers Conference of America submitted several proposals to improve service and eliminate complaints at the annual meeting recently. Members of ICC and the head of the

Continued on next page

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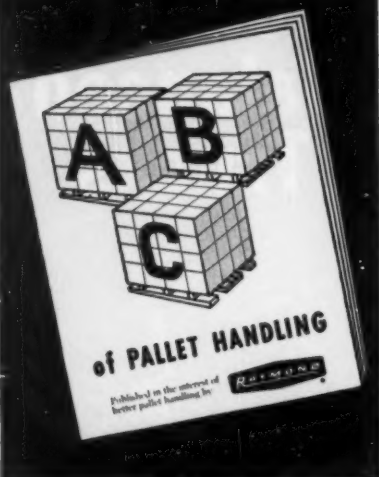


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## DEVELOPMENTS TO WATCH

Military Traffic Management Agency were there, and plainly interested, since the Government is a big buyer of household goods transportation. Some of the recommendations: a code of ethics, uniform estimate sheet, increased cargo insurance requirements, and revised rules for filing claims.

### CAB to probe minimum freight rate orders

The Civil Aeronautics Board will try to determine whether present minimum freight rate orders should be modified or revoked. They were started 12 years ago to help the floundering air industry stabilize itself. Today the new efficiencies and healthy condition of air cargo suggest these orders should be reviewed. (See "AIR FREIGHT," p. 27.)

### DNA convention delegates come from all states

Delegates' names at the Delta Nu Alpha convention in Roanoke read like a Who's Who in Transportation. The entire transportation industry was represented. Theme of the transportation fraternity meeting was how to further education in transportation.

### ATC creates insurance firm for members

Associated Traffic Clubs has founded its own insurance company to offer group insurance coverage for members. The new company will be publicly owned, with ATC as its largest stockholder. Sustaining members and local club officials may buy stock. The insurance itself should be available before the end of the year.

### Bulk packagers form new Association

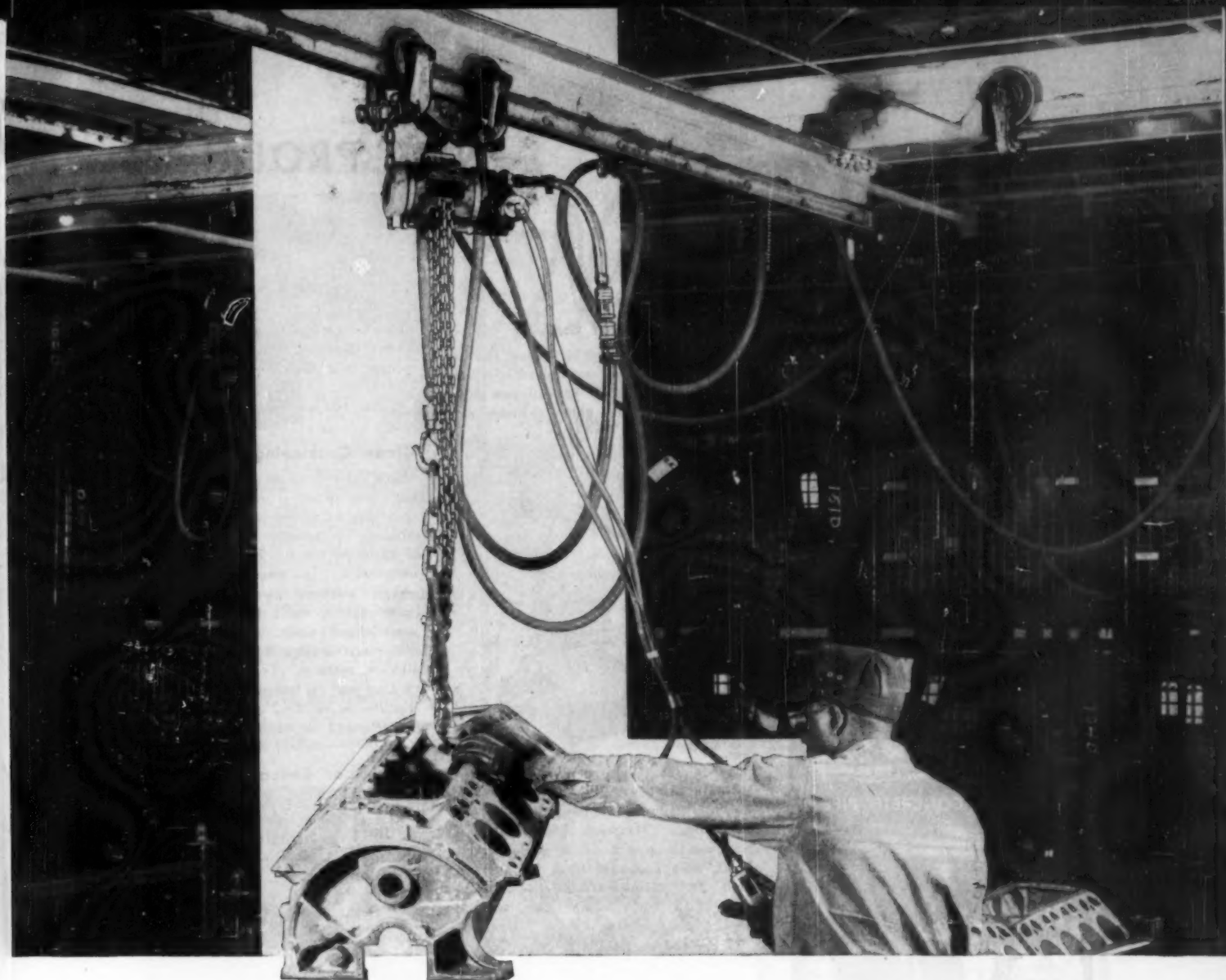
First organizational meeting was held in New York last month for the new Bulk Packaging and Containerization Institute, just forming. The group includes shippers, carriers, trade organizations, and others interested in containers for bulk handling. Final organizational meeting will be Jan. 19 at the Statler Hotel, New York. Attendance is open to anyone interested. For more details write: Bulk Packaging and Containerization Institute, P. O. Box 3444, Grand Central Station, New York 17, N. Y.

### NDTA expansion credited to chapter planning

National Defense Transportation Association has gained 29 new chapters and 2,100 members since September 1, 1959. National officers credit Maj. Gen. I. Sewell Morris and his chapter development committee, and Rear Adm. James W. Boundy and the national program and activities committee. Local chapters may get suggestions on programs, projects, etc. from the national office.

### Helicopter makes containerization history

The world's first helicopter lift of a truck-size container took place in New York recently. A Sikorsky S-60 Skycrane copter lifted a loaded semi-trailer body from a piggyback train in the New York Central yard, and deposited it aboard an ocean freighter underway in the Hudson River. The experiment, watched intently by some of the biggest names in transportation, is a sign of things to come. The S-60 copter has a 4-ton capacity; Sikorsky has plans underway for one that can lift 40 tons.



**can you name the Air Hoist in the picture?**

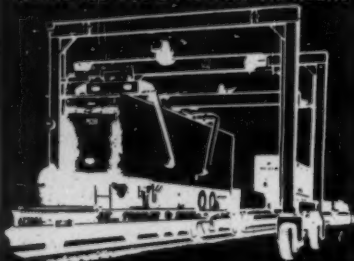
*it will pay you to know*

**here are some clues:** It's the original rotary vane air hoist. There are plenty of "Chinese copies"-around. But this hoist has features that can't be copied. It's available in a complete line, link or roller chain, 1/2 or 1 ton capacity. Hundreds of carefully chosen distributors, with experience to recommend the right model for your application, make it available from coast to coast. Although it is virtually maintenance-free, factory-trained service is available. It's the air hoist for all your lifting. It's an ARO. The Aro Equipment Corporation, Bryan, Ohio.

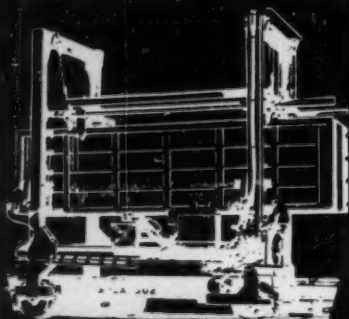
Aro of Calif., 3141 S. Grand Ave., Los Angeles 7 • Aro Equipment of Canada, Ltd., Rexdale (Toronto) Ontario • Offices in all Principal Cities  
Circle 48 on Reader Service Card

# Travelift

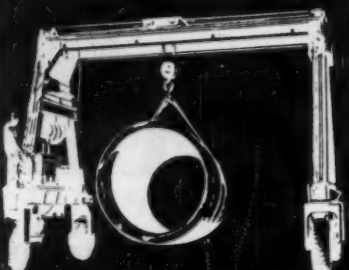
HANDLES PIGGY-BACK TRAILERS



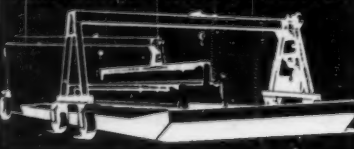
HANDLES FREIGHT CONTAINERS



HANDLES CONCRETE PIPE



PRESTRESSED CONCRETE BEAMS



**MANY MODELS . . . CAPACITIES  
FOR OTHER LIFTING PROBLEMS!**  
Steering, lifting and propulsion of the Self-Propelled Travelift are by hydraulics . . . Turning radius of this free-traveling lift is short, maneuverability excellent. Requires only one man to operate. 25 models in various capacities and other types of lifting.

**TRAVELIFT & ENGINEERING, INC.**

Dept. HSI  
Sturgeon Bay, Wisconsin

☐ Please send information on the Self-Propelled Travelift

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ADDRESS \_\_\_\_\_

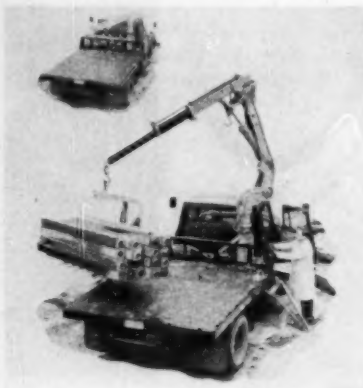
CITY \_\_\_\_\_ ZONE \_\_\_\_\_ STATE \_\_\_\_\_

Circle 44 on Reader Service Card

## NEW PRODUCTS

### Unloads Itself at the Job

Foco-Crane with hydraulic boom enables driver alone to load and unload open-bed trucks and trailers in just minutes. No gears, running cables, pulleys, winches, etc.



Boom folds and telescopes into 15" space behind cab when not in use. Hydraulic support legs prevent tipping. Add to your own trucks. Maximum lift height 24'. Maximum drop 4'5" below ground level. Reach from center of truck 17'. Swing angle 280°. Capacity 2,200 lb at maximum reach, 6,600 lb on short boom.—Focowil Corp.

Circle 100 on Reader Service Card

### Simplifies Dry Bulk Handling



Elba Winchdozer is an economical way to move all types of dry bulk materials. One man can move 40 to 60 tons an hour, or unload a boxcar. Just place scoop behind material and press switch. Winch

with electro-magnetic clutch pulls scoop in desired direction. Operator has complete control at all times.—Burrows Equipment Co.

Circle 101 on Reader Service Card

### Clean Cushioning Material

Try Zylex 6 where particles of dust or lint from packing and shipping affect your product adversely. It's non-cellular, cushions on heat-formed cylinders—1,000 of them per sq ft. Each cylinder is an independent, resilient spring, says the maker. Material is non-abrasive, non-corrosive. It won't form dust or lint, won't absorb water. Tensile strength is high, heat sealing easy. Resists acids, alkalis, organics. Compression set after packing and in transit is low.—Preservation Packaging, Inc.

Circle 102 on Reader Service Card

### Wide-Door Boxcars Speed Loading

First of 500 new wide-door boxcars are now in service on Milwaukee RR. Speed mechanized loading for bulk, palletized



loads, lumber, etc. Doors open to total width of 15' 2". In closed position inside face of plug door becomes part of side lining of car. Sliding main door provides clear opening of 8'. Nailable steel floors are grain-tight and strong enough for heavyweight lift trucks. 70-ton capacity.—Milwaukee Road.

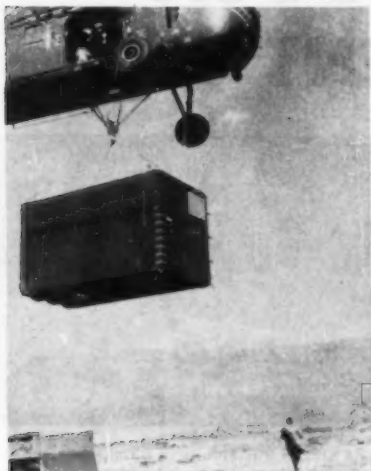
Circle 103 on Reader Service Card

### Lightweight Shelter Aids Outdoor Storage

Lightweight portable shelter is ideal for outdoor storage for temporary installations. Waterproof and insulated. Features monocoque sandwich construction, lightweight insulated core with polyester-resin fiberglass-laminated skin. Aluminum outer skin available for special shielding if

HANDLING & SHIPPING ILLUSTRATED

needed. Steel reinforced corners have integral pads for towing, lifting, and tying



down. Two-section door, 65" x 30", at one end. Dimensions: 12' x 7' x 7'. Weight: 775 lb.—Perfection Div., Hupp Corp.

Circle 104 on Reader Service Card

#### Plastic Trailer Is Featherweight

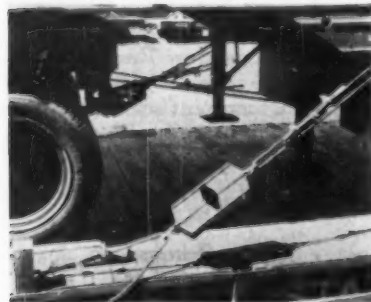
Highway 66 XP-1 trailer has roof and sides of Hipoxcel plastic, similar to that used for radar domes. Weighs about half



as much as aluminum. Strong, abrasion-resistant, easy to repair. Built on standard chassis, wheel assembly, and aluminum structural members. Construction, characteristics, and maintenance similar to plastic-and-fiberglass boat hulls. Comes in any colors including pastels.—Highway Trailer Industries, Inc.

Circle 105 on Reader Service Card

#### Elastic Tie-Downs Ease Shock



Tylastic tie-downs act as buffers to absorb shock for rail shipments. They consist of rubber pads bonded to steel plates

Continued on page 35

# Nutting

shows you  
"HOW"...

the widest choice of floor trucks  
in the world can cut your costs!

For regular or "special" design floor trucks it pays to talk to Nutting first. Here's why: no other company makes more models, sizes or combinations of equipment than Nutting. Many times items which you may find listed as "specials" with other makes are regular equipment in Nutting's complete line. As a result you get "custom built" trucks at production line prices. You not only get overall lower prices; you also get the benefit of 68 years of experience, design "know-how" and modern manufacturing skills. To save valuable hours of your time and get the right equipment for your plant, talk to a Nutting representative first, for all your floor truck needs!

Nutting makes over 1000 products, here are just 16 of them



For appliances and finished products



Wagon trucks up to 10,000 lbs. capacity



All types of dollies for boxes & cases



For sub-floor & overhead drag lines



Trailers — up to 7,000 lbs. capacity



CASTERS — all types



WHEELS — demountable rubber tired, solid rubber, plastic & metal



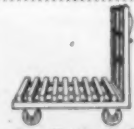
Shelf and tray trucks



2 wheelers for freight



Steel & aluminum frames for cases & cartons



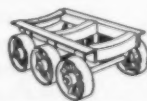
Drag line trucks & trailers for palletless handling



Non-tilt platforms — Wood & steel frames



Shelf trucks for sub-assemblies



Dollies for cylindrical & odd shaped items



Triform & box trucks for packages & bundles



"Auto-Load" barrel & drum trucks



Tilt style platforms — Wood & steel frames

Dollar for dollar, feature for feature Nutting is your best floor truck buy. Write for your free copy of new Junior Catalog 59G.

# Nutting



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Circle 35 on Reader Service Card



# SO YOUR PRODUCTS ARE "DIFFERENT"!

Of course your products are different — that's what makes your warehousing problem so much like everyone else's. If you've rejected some of the new concepts of warehousing because your products or warehousing problems are "different", you may be denying yourself important savings of space and cost.

Through many years of pioneering experience in modern warehousing techniques, Rapistan engineers have found that even the most "impossible" warehousing situations can be modernized, at reasonable cost.

Very often, the key to gaining the advantages of "live storage" for problem parts is to place them in a "conveyable" condition. The shapes, sizes, and handling requirements of products may seem to preclude the use of live storage techniques. But simple, low-cost, standardized containers may allow you to store such materials on wheels or rollers, where they belong for reduced handling and easy accessibility.

Standardizing containers for more efficient warehousing can be much less complicated than it may seem at first glance. Pallets, tote boxes, trays or hangers may serve as suitable containers or carriers, at very low cost.

Your Rapistan engineer has a wealth of experience in putting non-conveyable items into conveyable condition, and applying the principles of live storage to those "impossible" warehousing problems. He'll be glad to suggest a few ideas that may work in your case. We'll send you some examples of knotty problems untangled by low-cost containerization. Just circle No. 10 on the Reader Service Card.



CONTAINERS CAN BE STANDARDIZED to just a few shapes and sizes to handle most parts. This plant warehouses almost 1,000 different parts, using only three sizes of tote pans and boxes, and two pallet designs. Instead of handling individual parts, they are handled by the hundreds. Transfers are easier and safer, man-hours of handling labor are reduced.



HEAVY GENERATOR PARTS, in this electrical plant, are "warehoused" at several points in the progressive assembly operations. Low-cost wooden pallets serve as standard containers allowing assembly and storage operations to take place on conveyor for maximum efficiency.



## MODERN WAREHOUSING TECHNIQUES

including many examples of live storage are illustrated in this up-to-date manual. To get your copy of our new Flow Rack brochure, Circle No. 11 on Reader Service Card.

This Rapistan FLOW RACK® is an efficient "fil-ing system" for electric motors, used in large quantities in this plant. Although such objects might be considered "non-conveyable", they are easily handled on low-cost thin metal pallets designed for use in Flow Rack.



Each type of motor has its own designated storage hatch, simplifying selection of any motor, and making inventory control almost fool proof. Special track extensions allow pallets to be withdrawn easily into unloading position.

Installation of this live storage Flow Rack has permitted warehousing this large inventory of motors at the point of use, eliminating constant rehandling formerly required to supply the assembly line from a central storage area.

# Rapistan®

## CONVEYING EQUIPMENT

The RAPIDS-STANDARD CO., Inc.

725 Rapistan Building, Grand Rapids 2, Michigan

## How management views handling-packaging-shipping

**A**MONG material handling men, Norm Shikes is a leading exponent of the integrated approach.

Norman B. Shikes is administrator of material handling for Radio Corporation of America. His headquarters is in Camden, N. J. but his staff responsibility covers every RCA plant and warehouse in the U. S. and Canada. This year he spends a month in three RCA South America plants. When he's not out in the field helping a plant cut handling costs, he teaches material handling at Temple University; he was Rutgers' first M. H. instructor in 1951.

Norm Shikes has been an active AMHS member since 1948 and is one of just 50 recipients of the coveted AMHS Honor Award. For seven years he has been a member of the College-Industry Committee on Material Handling Education.

H&SI went to Shikes and asked him to explain the relationship of material handling, warehousing, packaging, and shipping at a company like RCA.

"You can't separate them," he answered. "They're part of an interlocking chain of activities that make up a sound business operation."

"We believe integration of such activities is a must for any business that wants to run a tight ship and guard profits. That's why our administrators of packaging and material handling and our general traffic manager always work together."

**Reporter:** As RCA's central administrator of material handling, what are your responsibilities?

**Shikes:** Primarily to help our 50-odd installations keep their material handling operations efficient and as low-cost as possible.

**Reporter:** Then, do the individual plants and ware-



*"You can't separate them. They're part of an interlocking chain of activities that make up a sound business operation."*

houses have full authority to design their handling systems as they see fit?

**Shikes:** Certainly, within the bounds of our established practices and good management.

**Reporter:** How are these practices established?

**Shikes:** Each major plant or warehouse has its own administrator of material handling. In most cases he works with a material handling committee. It is from these administrators and their committees that many of our best ideas come. Once an idea is developed, we make certain that all our other locations know about it, to use or not as they judge.

**Reporter:** Who serves on these plant committees?

**Shikes:** The administrator of material handling, of course, and representatives from warehousing, packaging, manufacturing, purchasing, plant engineering, and shipping.

**Reporter:** How does this system work for RCA?

**Shikes:** Very well. Like the old adage that a team is better than its individual stars. We take advantage of the combined thinking of all our people involved in any phase of material handling. Any piecemeal approach to such closely related activities is sure to fall short of its goals. ♦

## The handling robot at the record center

**A** NYBODY can take a package off a rack and put it on a conveyor. But when thousands of packages a day go on that conveyor, and they're going to any of 400 destinations all over the world, and it only takes a handful of people to handle 3,000 line items a day, that takes some neat handling.

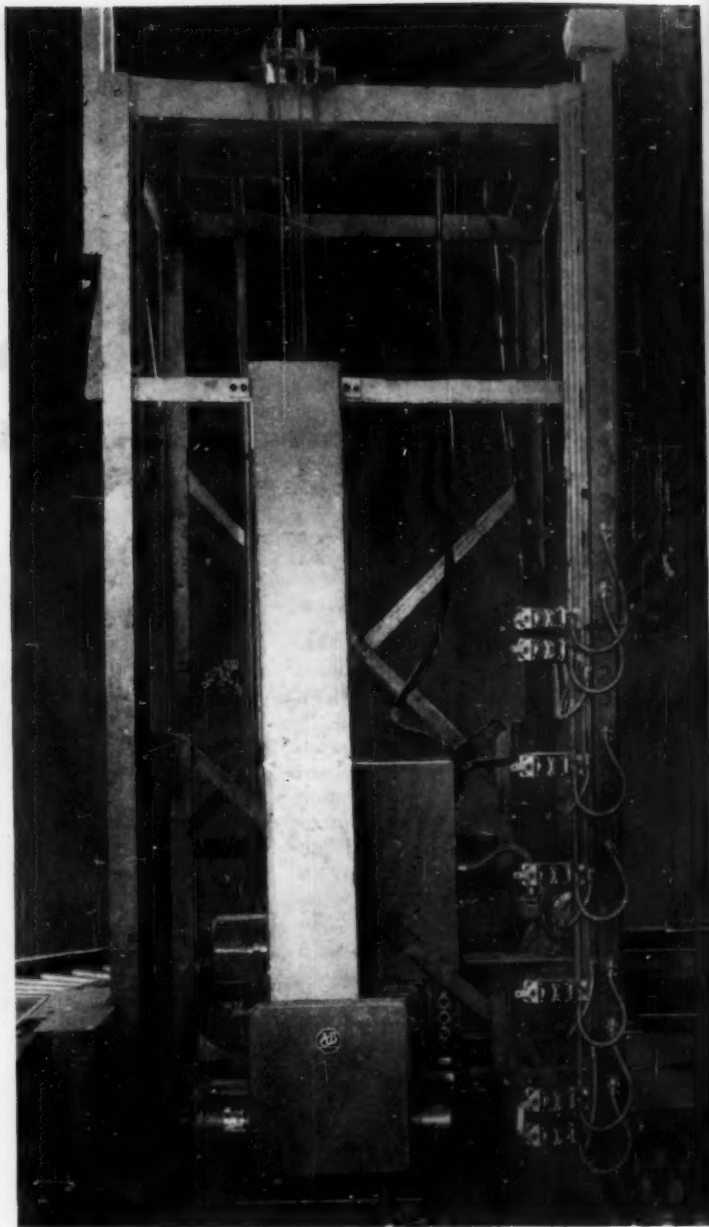
And neat handling is what they've got at RCA's Record Warehouse and Distribution Center, Indianapolis. So neat, points out manager Karl E. Glander, that it takes a robot-like handling device to keep the flow of orders smooth, uninterrupted, and at record pace.

There are about 4,000 different records and albums on the shelves here. (Covering the current catalog and monthly news releases.) All of RCA's 400 shipping destinations are likely to order on any given day—sometimes twice a day. That's part of the trouble. Hit songs fade and new ones zoom up so fast that distributors must order almost every day. Otherwise they would find themselves unable to fill orders for a sudden hit, or loaded up with a number whose rapid rise is exceeded only by its still-more-rapid demise.

But it would do no good for distributors to order short-term only to have their orders slowed down in the distribution warehouse. Every order must go out within 48 hours; hit orders within 24 hours. That's why RCA installed their ultra-modern mechanized order filling system.

Heart of the system is a 71-bin live storage accumulator rack. Orders for the 210 largest distributors go through it (70 bins are assigned permanently to 3 distribution points each; one bin handles special orders.) Workers hand-pick the orders from permanent storage racks, and the boxes of records accumulate in the live storage racks. At the discharge end, a mechanized unloader automatically removes all records for a given distribution point when the orders are complete, and sends them on their way to shipping.

To unload a bin, the operator has only to push a button. Then the unloader's discharge conveyor moves



up and over to line up with the bin, and automatically unlatches the lock on that bin, releasing its contents. The boxes then shunt from the unloader conveyor to the line leading to the shipping dock.

Tied in with the handling system is an intricate electronic data processing system. As each order comes in, a keypunch operator draws a master card from a tub file. The master card for each distributor contains his code number and location. In addition to this information the operator keypunches the order number, total units ordered, and date order was received. Then she pulls a detail card from the tub file for each item of the order. These contain selection number, class of product, number of pockets, and unit billing price.



Alvey-Ferguson Co.

Then she keypunches on each detail card the number of units ordered for that selection.

At this point all the detail cards go through a reproducer that punches onto them all the common information from the master card (distributor's code number, order number, etc.). Then they pass through an interpreter machine that converts the punched holes into printed messages. These detail cards, now in easy-to-read printing, end up in the warehouse; they are the cards the order pickers work from. But before they leave the data processing area they must go through one more vital step: an electronic sorter rearranges them from code number sequence to alphanumeric sequence. This is the sequence the records



**PUSHBUTTON UNLOADING STATION** where worker controls flow from live storage accumulator (background). Each bin holds orders for a different distributor. As packages leave accumulator they pass her station where each box is marked with distributor's name and address. Note rack (top left corner of photo) with interchangeable printing plates for each distributor.

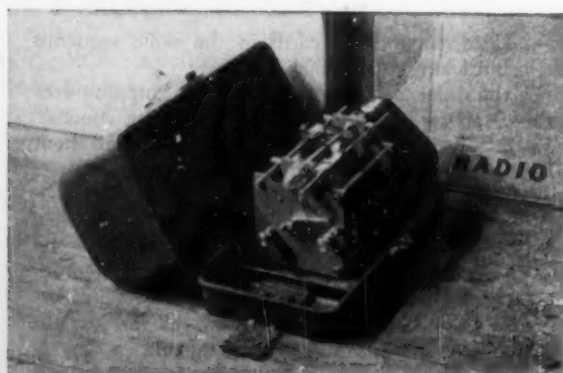
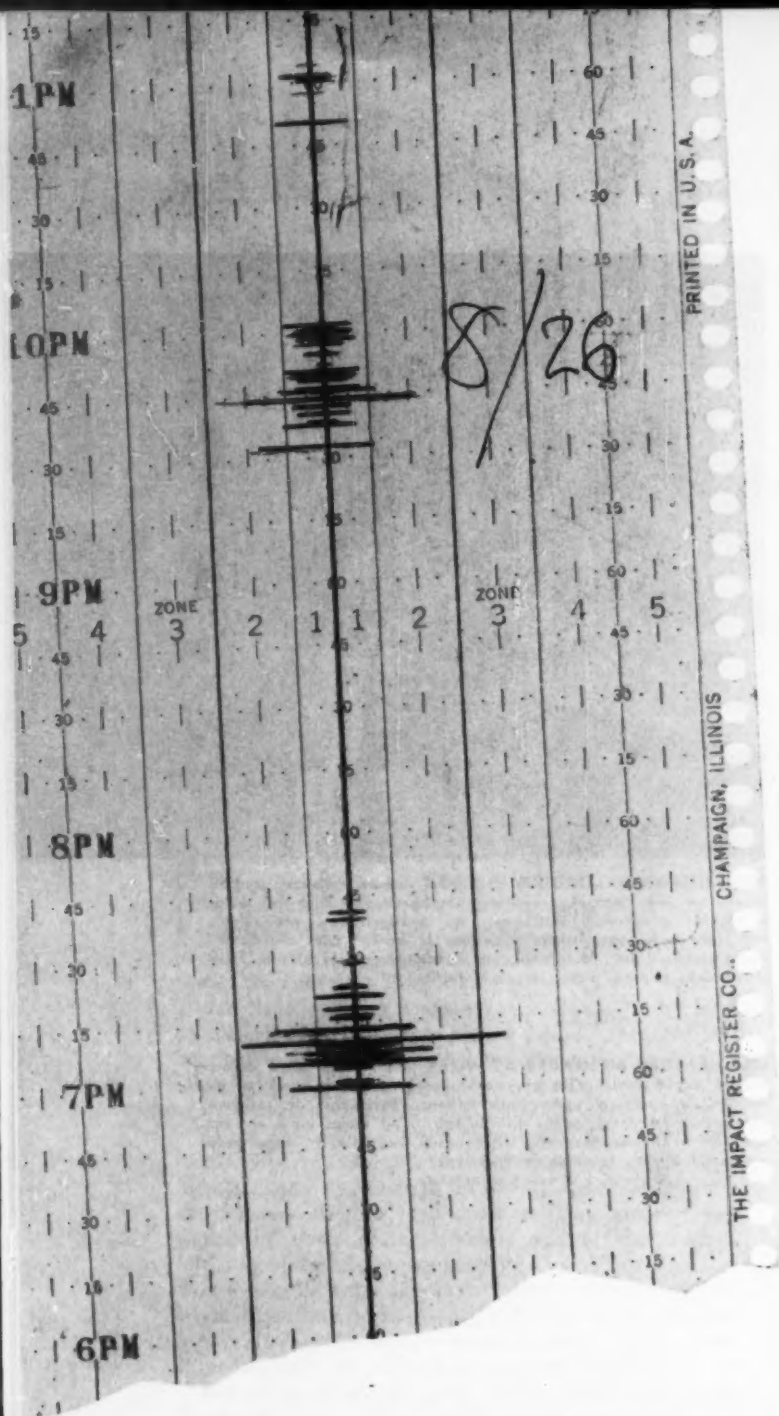
**MECHANICAL UNLOADER AT WORK** (left) taking filled orders out of accumulator. Girl in photo above selects the rack to be emptied by pushing appropriate button. Each rack is assigned permanently to three prime distributors. Inset shows input end of accumulator, loaded manually after orders are picked. From here orders go directly to shipping dock.

are stored in; having the cards in the same sequence saves backtracking during picking.

Once the order is filled, workers in the shipping area use the detail cards for preparing the shipping voucher. Traffic is scheduled so tight that within a half hour of the time an order reaches shipping a truck arrives to pick it up.

With the order gone, the detail cards go back to data processing, where daily billing invoices are prepared from them. Later, other departments use them for figuring artists' royalties, statistical reports, etc.

At present the automatic system works for just the 210 prime distributors. Still on the agenda: a way to use it for all outgoing goods without slowing down. ♦



Impact Register Co.

## TRAFFIC BUGS HEALTHY FOR TV

# Taking the damage out

**L**OVE's labors lost when you practice quality control to the highest in your plant, only to have your product damaged by rough handling after it leaves the plant.

RCA makes sure that won't happen by carefully picking shipping methods that eliminate shocks and jolts. Expert packaging is one way they protect products (see story at right), but you can go broke trying to package well enough to protect against some of the bumping and humping packages get enroute. Better to eliminate the bumps and humps.

Most of the TV sets leaving RCA's Bloomington, Ind. plant go by rail. Working closely with Illinois Central Railroad, company traffic men have come up with two major steps that reduce damage in transit:

- Impact recorders in boxcars to trace shocks to their source.
  - Bracing techniques that hold loads firmly in the cars, preventing jostling regardless how bad the shock.
- Impact recorders are placed in cars selected at random. They record any longitudinal shock on a tape (see actual size photo at left). Looking at the tape of a trip, the traffic manager can reconstruct the whole trip, knowing exactly where and at what time each impact took place, and how strong it was. By pin-



## of shipping

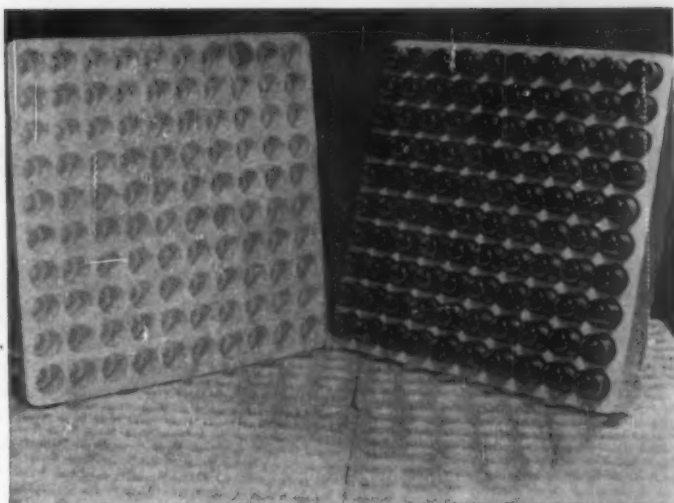
pointing the shocks, railroad officials can tell exactly what caused them and how to avoid them. The recorder (shown below the tape) is simple to use, about the size of a worker's lunchbox.

Steel strapping is the guts of RCA's carload bracing technique for TV's. They used to use nailed lumber bracing, and the results were often like the squashed cartons (below left). They switched to the Hold-Fast Cleat Method, with special loading patterns worked out by the strapping manufacturer. Heavy duty steel straps, nailed to the car walls, hold the loads in place, with the results shown in photo (below right).

The railroad pays the damage claims, not RCA, but claims don't repay for delays and customer good will. With damage held to a minimum, everyone's happy. ♦



Signode Steel Strapping Co.



100 SHIPPED—100 SAFE

## Packaging — key to small parts handling

**B**RAIN and breadbasket of material handling for RCA's Electron Tube Division is a mammoth warehouse at Jersey City, N. J. Here, top talent and equipment go together to comprise a data processing system for inventory and billing second to none. And here, too, some of the Division's best packaging ideas take shape.

Case in point: foamed plastic pack for miniature tubes. Gone is the egg-crate carton, standard for years. The new pack, shown above, consists of two matching trays molded of expanded polystyrene. It holds 100 tubes, and supports them upright, safe from damage. The tray wells have shoulders, so the tubes rest on their base buttons instead of on their pins or on their domes instead of their tips.

Richard Kuhlman, packaging engineer, developed the trays. They're 10½ inches square, come in two depths. Various combinations of depths can accommodate all types and sizes of miniature tubes (overall lengths from 1¾ inches to 3-1/16 inches). The foam is lightweight, resilient, and inexpensive.

Main advantage of the new pack is the unsurpassed protection it gives the tubes. Most tubes are fragile, might be damaged by vibrations like those they're subjected to in rail cars and trucks. The foam packages absorb all the vibrations, as well as severe jolts. They're moistureproof, and excellent insulation. And they're easy to handle and stock on shelves.

The company uses them now for shipping bulk tubes between Jersey City, Chicago, and Los Angeles. Capsule judgment: this is one of the more promising packaging techniques of the future. ♦

## Smart warehousing needs just half the space

**C**HILDISHLY simple is the way many people describe the stock control system at RCA's Camden, N. J. Parts and Accessories Warehouse. Yet this system has reduced the size of the warehouse from ten buildings to four. At today's storage costs (about \$1 a square foot per year), that's no small saving.

Walk through this warehouse and you'll find 50,000 items ranging from 3½-ton broadcasting transformers to tiny transistors. About 600 orders (averaging 70 pieces each) go out a day. None of them take more than two days from receipt of order to shipment; some take less than one day.

H&SI went to this remarkable warehouse to find out what makes it tick. Here's how it works:

Of the four buildings, only the actual order-filling headquarters is in Camden. Here, Warehouse and Distribution Manager Walter A. Smith stocks only about a 3-month supply of each of the 50,000 items. The rest is stored in three other buildings in nearby Gloucester. But the secret that eliminated six storage buildings is that all of the parts are stored in bulk, unpackaged. Only when the stock rotates from the three storage buildings to the main warehouse does it get packaged.

Computers keep track of overall inventory and do most of the paperwork on invoices, bills of lading, etc.

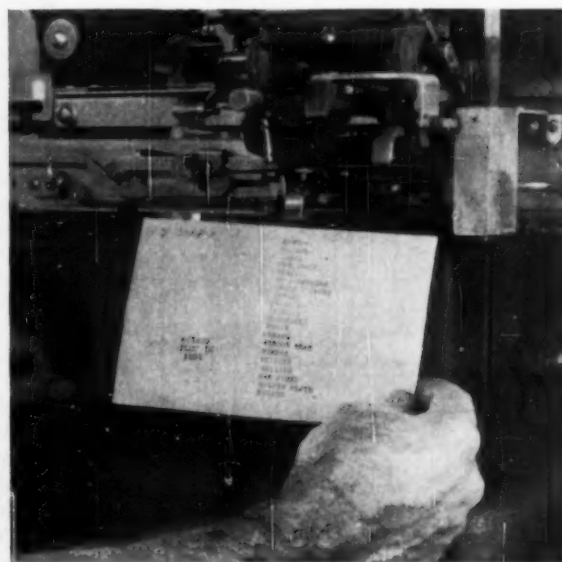
But the "childishly simple" stock control system helps hold the whole operation together.

This system is set up mainly to control how much of each item shall be stocked packaged—ready to ship, and when it's time to package more. A file cabinet contains a 3"x5" file card for each of the 50,000 items. These cards list item code number, at what level to re-order, and other information for requisitioning from bulk. But equally important are the brown paper envelopes the cards are filed in; they have printed forms on both sides showing the history of how much was packaged, when it was packaged, and what packaging materials are needed for packaging more (see photos below). And inside each envelope, along with the 3"x5" order card, is kept a small printing plate for coding the boxes as the parts are packaged.

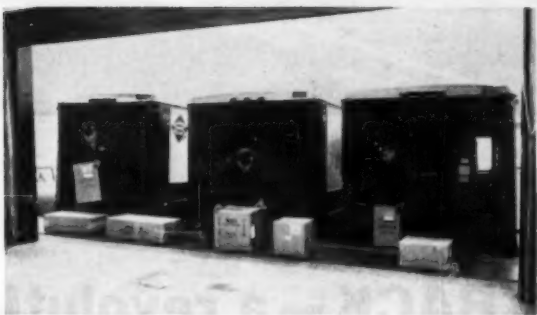
When the parts are catalogued, a file card is prepared and forwarded to Pre-Packing. After inspection, a few samples go to the packaging processor where they are assigned one of about 20 stock folding paper boxes, 16 corrugated boxes, or 4 envelopes, and the cushioning and bracing materials needed for the package. Thus all packaging is from stock items; the only thing that identifies the part is the code printed from the plate that accompanies the file card. For future packaging, she lists the method to be used on the outside of the brown envelope. ♦



**CASE HISTORY CARDS** for each of 50,000 items in Camden warehouse. Worker (left) holds 3x5 file card listing requisitioning data in right hand, along with printing plate for marking packages for that part. In left hand he holds brown paper envelope for



filling card and plate, with record of packaging printed on one side. Photo (right) shows other side of brown envelope, listing materials needed to package the part. Only a small supply of each part is packaged for stock. The rest is stocked in bulk.



**FASTER SHIPMENTS ON THE WAY**

## **MATERIAL HANDLING and the modern freight terminal**

**D**IGNITARIES at the unveiling of REA Express's new Garden City, N. Y. terminal last month were witnessing a glimpse of shipping's future. The spanking new building was designed to do one job: material handling. And for one purpose: fastest possible movement of cargo from shipper to consignee.

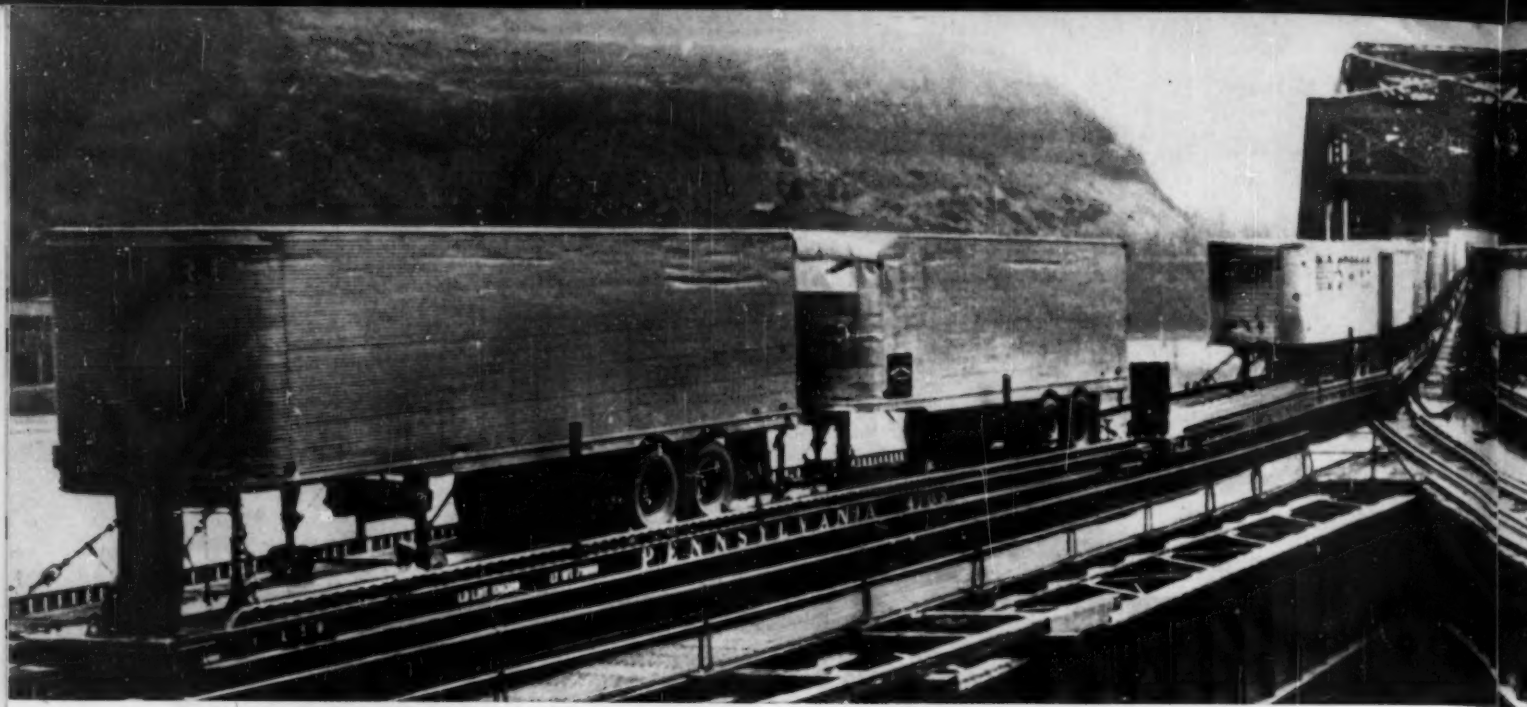
The new terminal is part of a "key points" master plan for speeding shipments, recently launched by REA Express (nee Railway Express Agency). It's just 30 miles from Times Square and serves 122 Nassau County and Queens communities. It fills a 3½-acre site, buzzes with a 307-foot 58-truck loading dock, and operates around the clock to process about 10,000 incoming and outgoing shipments a day.

Idea behind REA's key points plan is to replace many smaller express terminals with fewer larger, more efficient ones. That would eliminate the many intermediate transfers and terminal handlings that slow shipments down, giving express shippers faster and better service. REA's nationwide plan calls for fast, long-

distance train hauls between key points, with frequent short-haul truck routes fanning out from each terminal to blanket the area it serves.

Garden City uses a fleet of 130 pickup and delivery trucks and highway trailers. Many of them have 2-way radio for fastest possible pickup.

An 800-foot U-shaped conveyor system (see photos) rushes all shipments through the terminal. It has two main parts: a belt conveyor moving sidewalk taking shipments from the dock into the terminal, and a powered roller conveyor with gravity spurs to each truck bay taking them out again. All shipments get the same material handling whether coming to or going from the Garden City area. Entering the building on the moving sidewalk from the dock, they pass onto the main roller conveyor inside. As the packages move, workers mark and assort them and shunt them out to the next truck going the direction they're headed. All it takes is a shift of the roller conveyor spurs to change from inbound to outbound. ♦



#### TOFC BY A NEW NAME

## PIGGYBACK—a revolution American shippers

*There's nothing new about piggyback, or trailer-on-flatcar (TOFC). As early as 1830 circuses would load their wagons on flatcars to travel from town to town. The Chicago, North Shore and Milwaukee Railroad began regular piggyback service in 1926. But only recently has piggyback grown into a recognized system of shipping—so suddenly that now the U. S. has a transportation revolution on its hands. The growth has been so fast shippers haven't had time to learn all they should know about piggyback. As a result, many shippers haven't shown the least interest in it. Others, plainly interested, would like to try it if someone would answer their questions about it. H&SI editors went to the people who should know—the Association of American Railroads—to get the answers. This article is a summary of their report, AAR's answers to piggyback questions.*

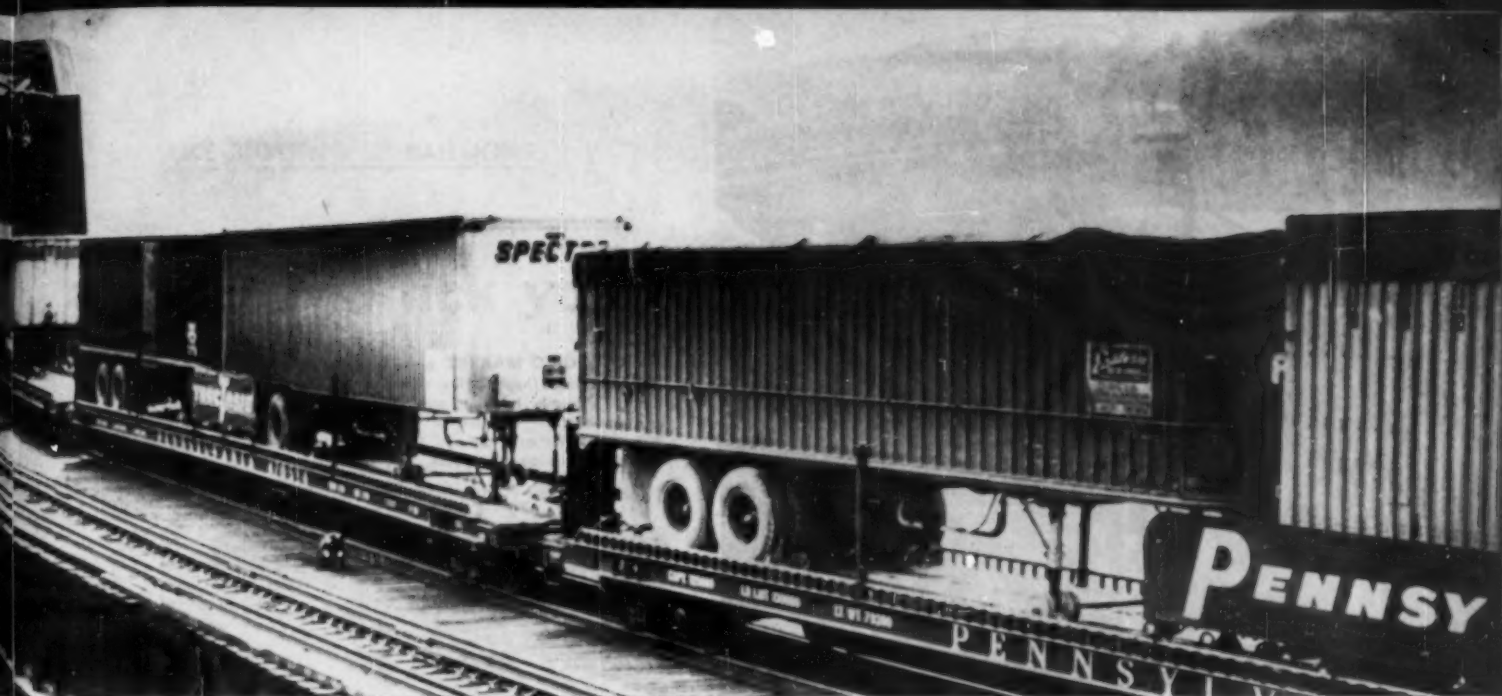
**P**IGGYBACK is just growing up. Current flatcar loadings run to more than 19,000 trailers a week. That's 34 percent more than in 1959, 110 percent more than 1958, and better than 500 percent more than 1955, the first year AAR kept piggyback records.

Today 55 railroads offer piggyback service. There were only 42 at the start of 1959, and 19 at the start of 1955.

#### **Advantages**

Big reason for the dramatic growth of piggyback is that it combines the flexibility of local trucking with the long-haul speed and dependability of rail service. Specific advantages are:

- **Assured fast delivery.** Railroads mostly move piggyback loads on their hotshot freight trains.
- **No weather delays.** Trains can get through almost any kind of weather, whereas trucks covering the same distance may be stopped by blizzards, etc.
- **Low basic rail costs.** For example, a train will move a ton of freight a mile at about one-fifth what it costs a truck in fuel.
- **Reduced pilferage and damage.** Piggyback cargo is locked in truck bodies, safe from thieves. And since there's less loading and unloading, there's bound to be less damage through handling.



Pennsylvania Railroad

Santa Fe Railway

## can no longer ignore

- Reduction in handling costs. Loads transfer from road to rail and back to road again without repacking or reloading. Handling costs are as much a part of shipping as they are of manufacturing. By cutting them, railroads make rate cuts possible.

### ICC guidelines for growth

In 1954 the Interstate Commerce Commission established a number of basic guideposts for railroads hauling trailers. The most important were:

A railroad is not required to hold a motor carrier certificate to haul trailers on flatcars. Thus railroads are free to haul freight in their own trailers.

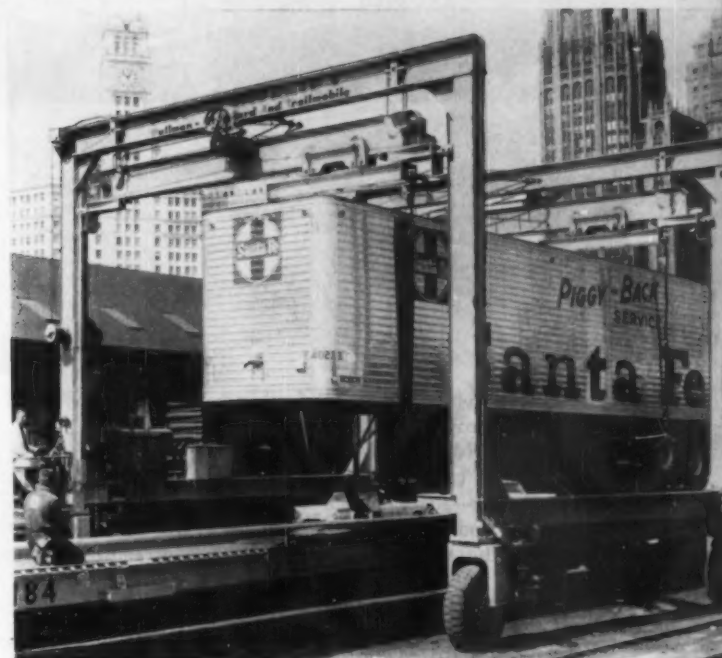
The railroads' practice of operating their own pickup and delivery service in connection with piggybacking was approved.

Railroads may haul the trailers of private carriers, freight forwarders, and common carrier truckers. However, a restriction was placed on the transportation by railroads of contract carriers' trailers. ICC held that they could be hauled only to points not served by the contract carrier.

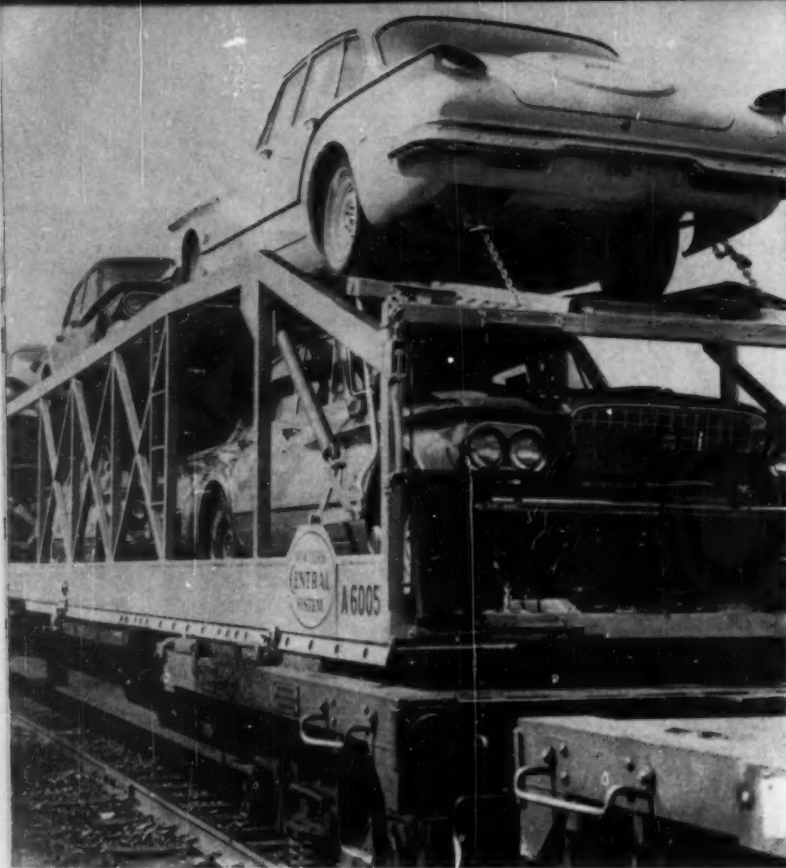
Trailers of common carrier truckers may be hauled under joint rail-truck rates and through routes.

### Types of piggyback

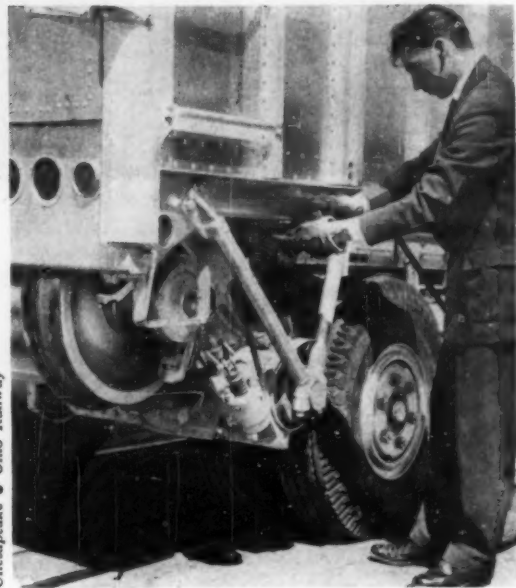
The aftermath of these findings was the development



**GIANT STRADDLE CARRIER** loading piggyback trailer on flatcar. It drives anywhere around the yard, saves having to back trailer onto flatcar. They're also used for containerization (detachable truck bodies—piggyback without wheels). TOP PHOTO: Piggyback traffic at Brilliant Bridge over Allegheny River, Pittsburgh, on New York-Chicago run.



**AUTOS GO TO MARKET** on special truck bodies mounted on flatcars (left). They're Flexi-Van trailers, loaded on and off flatcars sideways by their own trailers through special chassis linkage. **BELOW:** Two sets of wheels on Railvan trailer enable it to ride rails or highway. Compressed air lowers whichever wheels the situation demands.



New York Central Railroad

Cheapeake & Ohio Railway

## PIGGYBACK

of five separate plans of piggyback operations with rates approved by ICC. These are:

- **PLAN 1: Railroads and motor common carriers.** Railroads carry truckers' trailers for a division of the truck rate—in practice a flat charge per trailer based on weight and distance. The trucker deals with the shipper. The railroad works as a subcontractor for the trucker.

- **PLAN 2: Railroad operation, door-to-door.** Railroads carry their own trailers at their own truck-competitive tariffs. The railroad works directly with the shipper and provides its own pickup and delivery.

- **PLAN 3: Shipper trailers, rail cars.** Railroads carry trailers owned or leased by the shipper, at a flat rate per mile. The railroad puts the trailers aboard flatcars, ties them down, transports them to destination, and grounds them.

- **PLAN 4: Shipper trailers, shipper cars.** Railroads carry trailers furnished by the shipper, on flatcars also furnished by the shipper, at a flat charge per car-mile whether trailers are loaded or empty. The shipper takes his trailers to and from the rail terminal, and loads and unloads cars.

- **PLAN 5: Joint rates, truck-rail-truck.** Railroads carry their own trailers, or trucker-owned trailers, under joint rail-truck rates. Plan 5, in effect, extends the

territory of each participating carrier into that served by the other; permits each to handle shipments originating in or destined to the other's territory; and allows each to sell for the other.

## Kinks to iron out

There are two major obstacles to greater use of piggyback: standardization and rate structures.

Piggyback faces the same tough problem as containerization in arriving at standards. To be really effective, piggyback must allow for interchange of trailers between carriers, like rail cars are interchanged. But before there can be interchange there must be standard sizes, shapes, hardware, and specifications for trailers.

The rate problem is even tougher. But both are under study, and may see daylight soon. When they do, piggyback and containerization may change the transportation system so drastically you won't recognize it. ♦

**NEXT ISSUE IN H&SI:** The views on piggyback you have just read are only part of the story—the railroads' part. Next issue we'll present some of the piggyback problems as truckers see them in: "A trucker sounds off about piggyback."

## How to lick your storage space shortage

**B**UCK ROGERS would feel right at home walking among the temporary buildings shown here. They look like scenes borrowed from science fiction.

The structures are like halves of giant balloons. They're made of thin, tough plastic-coated nylon, kept inflated by tiny low-pressure (1/10 psi) air blowers. Just stake them down anywhere, like tents, blow them up, and they're ready for use. They're waterproof, and can withstand hurricane winds and temperatures as low as  $-40^{\circ}\text{F}$ . The fabric is translucent; it admits enough light to see without trouble during the day. Thus no lights are needed.

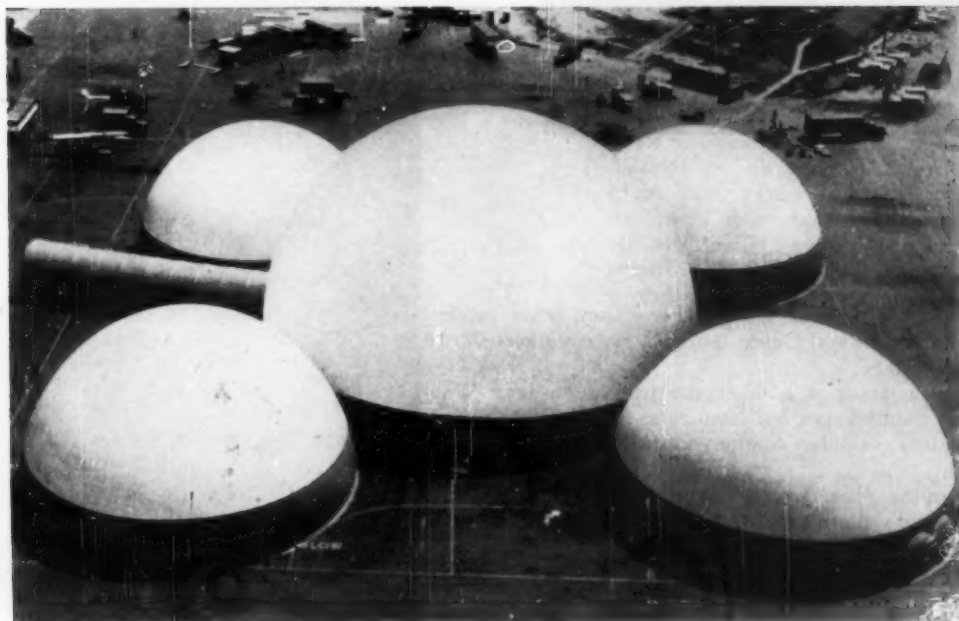
Setting up a typical inflatable warehouse takes 4 men about 16 hours. Deflating and storing take about half that time. When you're done with one, just fold it up and store till the next time it's needed, or take it to a new location.

Inflatable warehouses are available from several companies. They come in many different sizes, round or oval. All you need to set one up is a reasonably flat space to put it.

One note of caution: Inflatable warehouses are temporary structures. They can't do the job a good warehouse building can. That's not their purpose. But for temporary storage, they can save you money and headaches. ♦



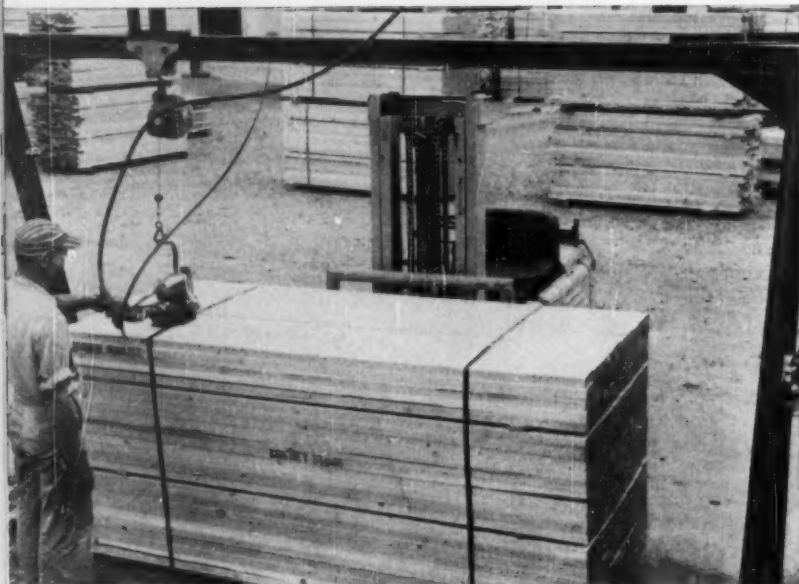
B. F. Goodrich Chemical Co.



**PARKING LOT** becomes tire storage warehouse in Kansas City. This one is shaped like a quonset hut with rounded ends. It's 180 feet long, 60 feet wide, 30 feet high.

**AIR FORCE** missile maintenance post at Andrews AFB near Washington D.C. Main dome is 150 feet across, as high as a 9-story building. Four smaller domes are 50 feet high. Air pressure in all inflatable buildings is so low workers can't feel the difference.

# Handling equipment users report o



## UNITIZING — MAGIC WORD IN LUMBER

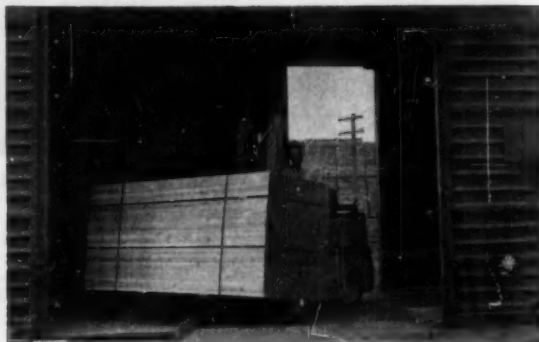
Emerging from the dark ages of material handling, lumber dealers are finally learning the advantages of unitized loads that most businesses learned long ago. One man with a lift truck can load a boxcar of 2x4's in 45 minutes at Cheney Forest Products, Central Point, Ore. Loading by hand used to take eight hours.

Cheney straps the studs into unit loads—250 to a load. With pneumatic strapping tools, a worker can strap 17,500 studs a day, or 70 units. This is a small investment in time compared to the savings in carloading.

Another advantage to the lumber firm is that studs arrive at customer yards in good condition. Loose lumber, even with good dunnage, is often damaged in transit. But not when unitized.

Customers like the loads too; they find them easy to store, and save as much in unloading as Cheney saves in loading. That increased customer satisfaction shows up in increased sales.

Acme Steel Co.



## STAPLED WAYBILLS LOST NO MORE

Lost waybills no longer need be a headache. They never get lost any more at Continental Trailways' Dallas terminal, since workers started stapling them to the packages.

The station handles as many as 1,500 express packages a day. Waybills used to be taped to the packages, but often came loose. What's more, the taping equipment took valuable counter space, and was so slow it became a bottleneck.

Using a hand stapling plier, workers attach waybills right at the weigh-in station. The tool's sharp pointed blade permits the clincher to slide under the edge of the carton, tightly clinching the waybill.

In addition to stopping loss of waybills, stapling cuts cost and time to a fraction of taping.

Bostitch



on savings



#### SHOT-IN-THE-ARM FOR 2-STORY HANDLING

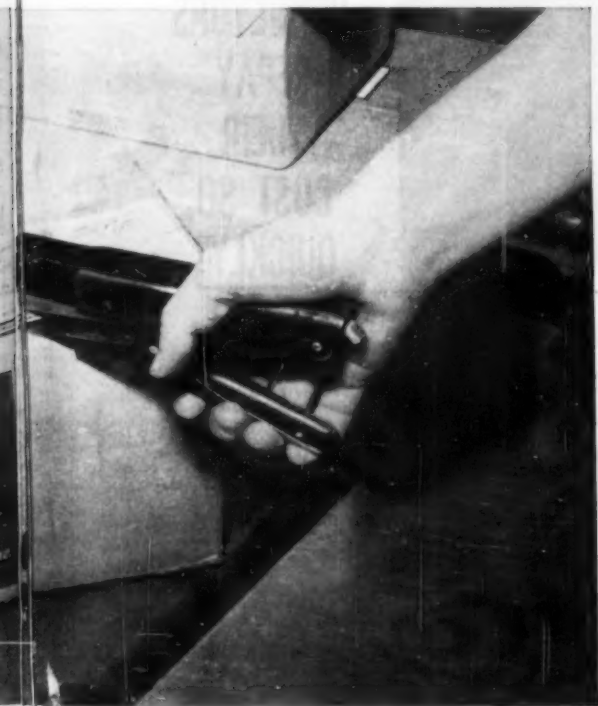
Brooklyn's Pier Six, New York's largest pier, puts second-story storage space to work by means of an automatic vertical lift for transferring loads up and down. There's as much space upstairs as on the ground floor here, but it was used sparingly before because of the difficulty of transfer.

The lift includes a car, controls, and five on-and-off conveyors (two each at top and bottom, both facing opposite directions, and one in the car).

Loads are all palletized. A fork truck driver (at either level) places his load on one of the on-and-off conveyors, then the operator at the master controls (ground level) presses the buttons to set the equipment in action. He tells the lift which of the two conveyors to pull the load on from, whether it should go up or down, and which of the two conveyors at the other end to deposit the load on. Starting, stopping, and opening and closing of doors are automatic. Timer switches prevent movement when fork truck drivers are near. At the other end, another driver waits to remove the load.

Total elapsed time for the entire cycle is one minute. Capacity of the lift is 4,000 lbs.

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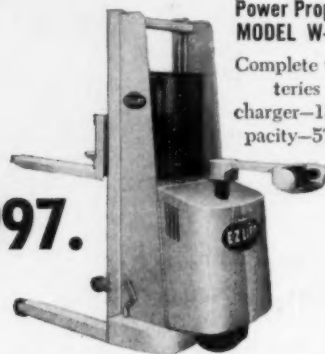
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American Airlines

## A LUXURY BECOMES A NEED

# AIR FREIGHT — surprise bargain comes of age

**S**HARPENING their pencils to cut costs, many companies are finding pleasant surprises in shipping by air freight. A typical experience is for a traffic manager to investigate air cargo reluctantly, figuring he can't afford it, only to be rocked back on his heels when he finds out it's not as expensive as he thought.

Air freight is not as low-cost as other modes, to be sure. But neither is it out of reach. While the rates are higher than truck, rail, or water, the overall shipping cost may be lower when you consider all the advantages.

Chief reason why air freight costs less today than ever before is that airlines are investing in equipment for it.

Air freight has gone big time. With the coming of jets for passenger service, many of the airlines have converted their latest propeller craft to cargo carriers. And the big lines are using jets for cargo too. Not only have the aircraft improved, but ground support too. Terminals, material handling systems, even scheduling have been updated with emphasis on faster, cheaper service.

Jets are finding their way into airfreight too. That's another reason for the big switch. American Airlines, for example, carries jetfreight in its 707 Flagships. The big passenger-carrying 707's carry more freight in their cargo compartments than smaller aircraft carry in the



## AIR FREIGHT

whole plane. Not too far off are all-cargo jets. Swing-tail versions of Boeing's 707 and Douglas's DC-8 are already in experimental stages. When they're introduced to the airways they'll be able to load and fly cargo faster than anything flying today.

### You'll need fewer warehouses

One of the biggest changes through airfreight will be the dwindling role of branch warehouses. Many companies with vast systems of branch warehouses will find they can do without them. If the purpose of the warehouse is mainly to keep stock close to the customer for fast delivery, air cargo may knock these warehouses for a loop. Instead, a centralized inventory at the home office may do the job. Air freight can deliver orders anywhere in the U. S. from the home office as fast as other modes can deliver from branch warehouses. Imagine the savings in real estate, operating costs, and interest on capital investment.

Many shippers find it's a strong selling point to tell purchasing agents they ship by air. Customers who need prompt delivery may select their supplier on this alone.

### What can air freight carry?

Almost anything from diaper pins to computers. Few loads are too big or too heavy for today's craft. A favorite cargo is perishables—foods, drugs, flowers, etc. It would be profitable to ship this type merchandise by air even if rates were much higher than they are, because the shippers save so much in packaging and spoilage. But today the airlines can and do handle almost any kind of freight carried by other modes.

### You don't have to be near airport

It doesn't matter if you're far from the nearest airport. Airlines today pick up and deliver just like the other modes. Many airlines have recently set up cooperative pickup and delivery services with truckers. This prevents tying up your shipments before or after their actual flight.

There are three types of coordinated airline-truck services available to shippers:

**Air freight forwarders.** Like other freight forwarders, they do not restrict their operations to any particular line. Air freight forwarders sell space on nearly every line. They pick up your shipments at your plant, or arrange for a local trucker to pick them up, and take them to the airport freight terminal. The same for delivery at the other end. All the shipper does is tell the forwarder what he's shipping and where it is to go. The forwarder does the rest. The airline bills the forwarder, and he in turn bills the shipper. Thus the shipper gets only one bill for the integrated service. A typical air freight forwarder is Emery Air Freight Corp.

**Air-truck cooperatives.** Most airlines are members of a cooperative pickup and delivery service called Air Cargo, Inc. It is available to shippers in all U. S. cities the subscribing airlines serve. Like the forwarders, Air Cargo, Inc. picks up and delivers, taking the shipment entirely out of the shipper's hands.

Airlines participating in Air Cargo, Inc. are: Aaxico,



**EQUIPMENT** is one of the big factors behind air freight's sudden growth. Modern aircraft like DC-7A Cargoliner (above) combine with latest handling equipment to cut costs. Air freight terminals like this one in San Francisco (left) speed ground movement 40 percent. Customer service centers (below) also help speed shipments. Faster movement is key to lower costs.

United Airlines



## AIR CARGO SYSTEM OF THE FUTURE?

LIKE trains in the sky, air cargo planes of the future may be airborne tractors pulling strings of sealed boxes. The system illustrated here is actually in the advance planning stages, may become a reality soon.

It's called STAR-Lift (sea, truck, air, and rail). It is designed to integrate with all modes of transportation.

The basic aircraft, or tractor, is called the STAR-Tractor (small illustration, lower left). The containers are called

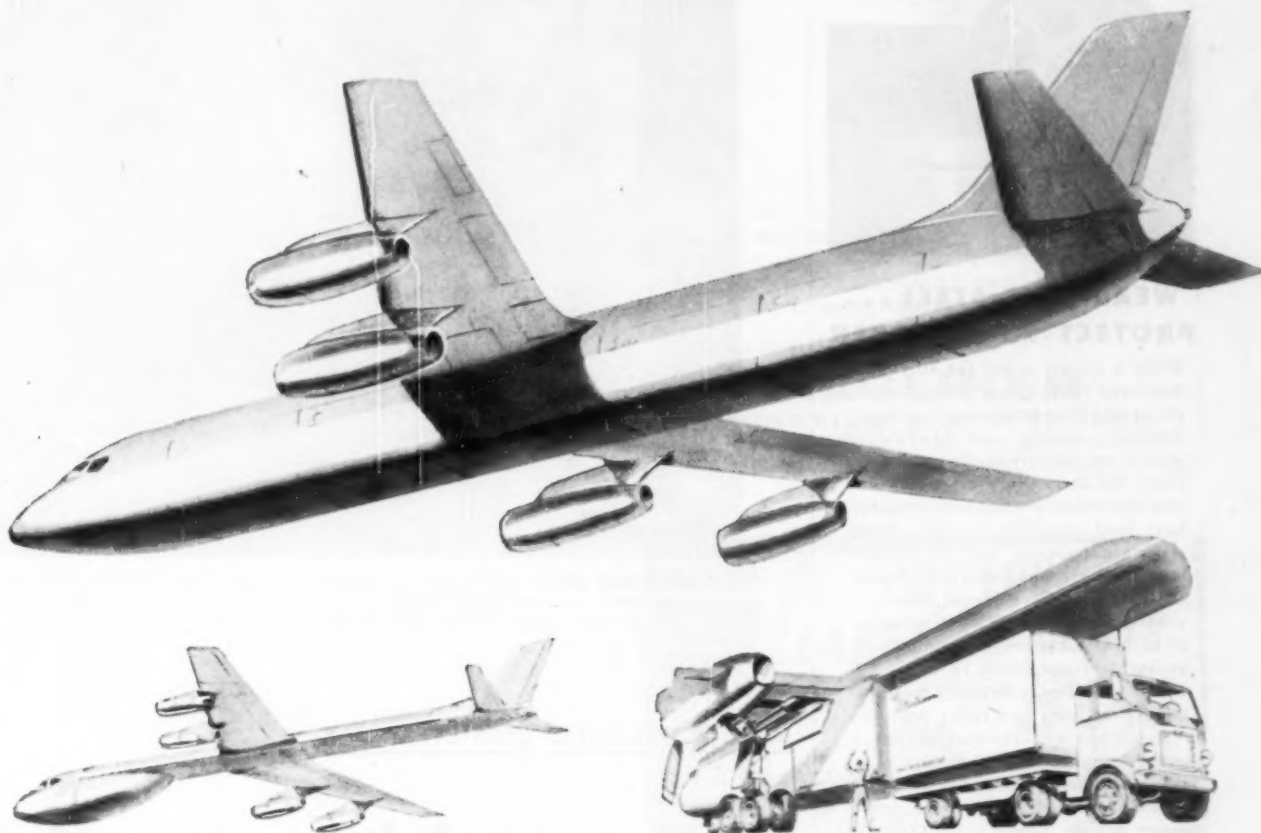
STAR-Tainers; they couple to the STAR-Tractor to form a flying cargo system (large illustration). Self-contained electric hoists within the airframe load the containers into position. A truck tractor merely backs the container under the fuselage, and the plane pulls them up snug under its belly (small illustration, lower right).

The system is based on standard containers that could transfer freely between planes, trains, trucks, and ships. All container dimensions and hardware follow

recommended ASA standards. Containers are 8 feet wide, 8 feet high, and 10, 20, 30, or 40 feet long. A fully loaded jet STAR-Tractor with five STAR-Tainers could haul a payload of 100,000 lbs.

The designer claims STAR-Tractors can be powered by jet, turboprop, turboprop, reciprocating, or nuclear engines. They can be adapted for VTOL (vertical take-off and landing).

H&S's capsule judgement: not as far off as some people think.



*Hackney-Airlift Associates, Inc.*

Air France, Alaska, Allegheny, American, Bonanza, Braniff, Capital, Central, Continental, Delta, Eastern, Flying Tiger, Frontier, National, New York Airways, North Central, Northeast, Northwest, Ozark, Pacific, Pacific Northern, Pan American, Piedmont, Riddle, SAS, Seaboard & Western, Southern, Trans-Canada, Trans-Texas, TWA, United, West Coast, and Western.

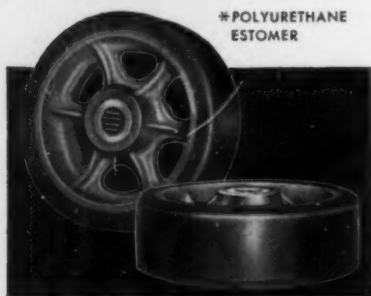
**Combination air-truck service.** This is more than just a pickup and delivery service. It is for shipments to or from outlying locations far removed from cities served by the airlines, where the shipment may have to go part way by plane, part way by truck. American and a few other airlines have working agreements with trucking firms to serve these areas. The shipper gets integrated service and deals only with the airline in-

stead of the airline and trucker. His invoice and bill of lading for the entire movement are from the airline, reducing paperwork. While the shipper gets a single rate tariff rather than a combination of truck and air rates, the cost is about the same. The advantages are speed and convenience.

### **Actual dollars and cents cost**

Expect to pay about 23 cents a ton-mile right now for domestic shipments. With the improvements airlines are working on, that should soon drop to about 10 to 12 cents a ton-mile. Foreseeable goal, according to the Federal Aviation Agency, is 7 to 8 cents a ton-mile by 1970. ♦

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**12-SIDED DRUM** holds a ton of lead ore, replacing 40 paper bags. It slashes Hammond's handling and filling time. For the firm's customers it means quicker unloading, quicker emptying, easier storage and inventory. Here operator uses rheostat-controlled feeder for filling.

## MORE CORRUGATED USES EVERY DAY

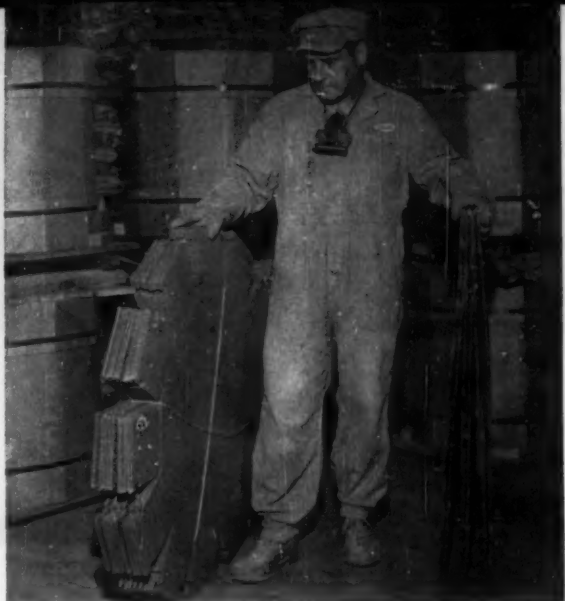
# New container concept cuts

**M**OUSETRAPS aren't the only way to get customers to beat a path to your door. Smart manufacturers realize that the package the mousetrap comes in is important too.

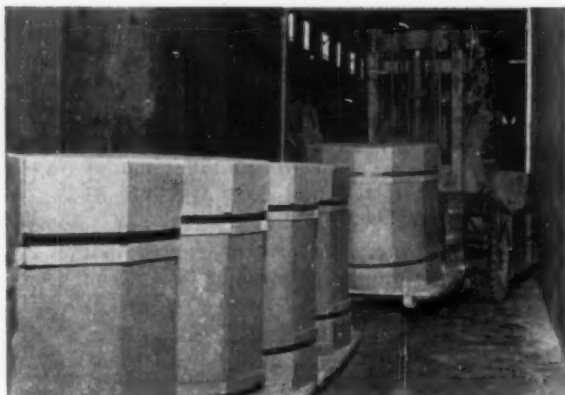
Hammond Lead Products, Inc. knew this. They knew also that a drum is stronger than a box, and that the paperboard industry is constantly coming up with better packages. With this in mind, they and their container supplier sat down to design a corrugated container to hold a ton of heavy ore. The results were so good that they soon raised the ante to 1 1/4 tons.

Hammond is a leading producer of lead pigments and chemicals. They had been shipping litharge (lead oxide) in 50-lb paper bags. But handling was expensive, and because the chemical is toxic any leakage was dangerous.

HANDLING & SHIPPING ILLUSTRATED



Union Bag-Camp Paper Corp.



**STORED FLAT** when empty, the bulk containers take up little warehouse space. Worker above holds several tubes and caps as they're stored upon receipt. Bottom view shows how they fit in trailers.

## bulk handling costs

The new container has 12 sides—almost a cylinder—giving it the strength of a drum. The 1-ton size stands 26½ inches high and 26 inches in diameter. Height jumps to 33 inches for the 1¼-ton size. Each container consists of a tube that forms the sides, and diecut caps for top and bottom. Sides, top, and bottom are all made of 600-lb test double-wall corrugated board. Top and bottom caps are held on by steel strapping.

Corrugated boxes big enough to hold a ton of lead ore would burst at the sides. But the drum-like shape makes Hammond's containers strong enough for the job. And they're easier to handle, fill, stack, empty, and store than the paper bags they replaced. ♦

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## NOTABLE QUOTES

### Statements made recently as reported by H&SI editors

**MORRIS FORGASH**, chairman of the board of governors, Freight Forwarders Institute—in reply to the charge that piggyback and containerization will fail if carriers don't pass savings on to shippers:

"... The charge is true. A Tower of Babel is rising out of all the highly touted talk and showmanship about piggyback and containerization. But these two concepts will fade faster than they've mushroomed if lower prices and faster services are not passed along directly to the benefit of the American shipping public.

Physical contraptions themselves do not constitute a transportation development. Economic factors are the vital agents that breathe life. There is no magic about devices. Technical improvements, faster service, more efficient ways of doing things have no meaning whatsoever in the economics of transportation unless



Forgash, FFI



Gill, ATA

## V.I.P.'s comment

in some way they lower transportation costs for the shipping public. And so far they haven't done it."

**JOHN J. GILL**, president, American Trucking Associations, Inc.—in reply to the charge that truckers hold an unfair advantage over other transportation modes in that they are subsidized and have free use of highways paid for by the public:

"... We don't have to refute the charge that trucks get a free ride on the public highways. The

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Quinn, Milwaukee Road

## on controversies

facts do it for us; facts in the form of tax figures on file with federal, state, and local governments.

These tax figures show that trucks more than pay their way for their use of the nation's highways. In 1959 more than a third of all special highway user taxes—a whopping \$2½ billion—was paid by truckers, even though they made up only 16 per cent of the nation's registered motor vehicles.

The U. S. is currently building up a vast new interstate highway system, to be of enormous benefit to all citizens and of tremendous strategical importance

for our defense. Every inch of it is being paid for by owners of cars, buses, and trucks. Although, as I just said, trucks make up only 16 per cent of all the vehicles on the highways, they will pay more than 36 percent of the cost. That's an investment of \$15¼ billion. And additional billions truckers pay in taxes go into non-highway uses."

**WILLIAM J. QUINN, president, Milwaukee Road—discussing the question of whether the railroads should be allowed to diversify by operating trucks, airlines, barge lines, etc. to form a complete shipper service:**

"... The basic question is whether, at this crisis in history, we shall go blithely along killing off the common carrier system that helped make us great.

If transportation companies are to remain strong and render the most efficient service, they must be free to diversify, to coordinate various forms of transportation under one management.

Greater financial stability of carriers is another advantage which diversification would make possible.

This does not mean that all transportation would be performed by large diversified companies, any more than all industry is in giant factories or all agriculture in 10,000-acre ranches. Smaller firms, too, should have freedom to use more than one mode of transport, subject only to the usual regulatory tests of the public interest."

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#### LEASING PLAN WITH PURCHASE OPTION

Under this plan you get the advantages of a straight leasing plan on pre-arranged monthly payments. But you can arrange for title of ownership to the truck by paying a small additional sum at the end of the lease.

# 1 2

#### LEASING PLAN

Under this plan you can lease a Yale gas, or electric truck for a period up to 3 years with renewal options available for additional periods. Rates of payments are flexible to meet your needs.

# 3 4

#### LEASING PLAN WITH MAINTENANCE

Under this plan you can lease a Yale truck on forms outlined in Plan 2 or 3. But for an additional sum you can obtain full maintenance including all repairs, replacement of parts, and labor costs.

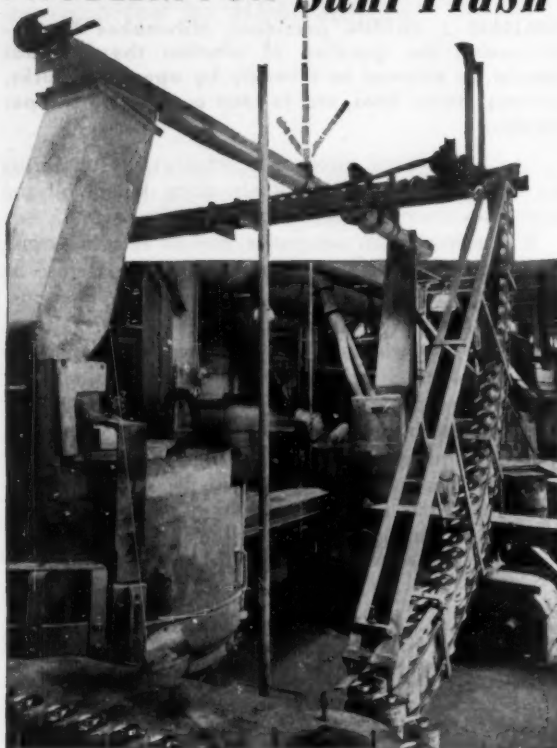
If you are confronted with unusual circumstances, we will work with you to "tailor" a plan for your needs. Write to your nearest Yale dealer or to us.

Yale Materials Handling Division, a Division of the Yale & Towne Manufacturing Company, Dept. X-101A, Philadelphia 15, Pa.



Circle 47 on Reader Service Card

# CANTON *Flo-tube* SOLVES MATERIAL HANDLING PROBLEM FOR *Sani-Flush*



## SCREW CONVEYOR SAVES 88% ON CAPITAL INVESTMENT

Boyle-Midway, Inc. uses Flo-tubes to move sodium bisulfate at will to an additional packaging machine for filling new 35 oz. economy-size Sani-Flush at an 88% saving in capital investment for proportioning and blending equipment.

Flo-tubes move or feed chemicals, coal, gravel, salt, sand, sawdust, sugar, woodchips and other bulk materials. They maintain predetermined delivery rates. They save time . . . up to 95% on general applications. They save space. Power source is optional. Flo-tubes exclusive Synchronogear-drive motor is 98% efficient.

For complete information  
about Flo-tubes versatility  
in feeding bulk materials  
dependably, cleanly  
and economically  
... write today.



**CANTON STOKER  
CORPORATION**

N-500-CS

**111 Andrew Place, S.W., Canton 1, Ohio**

Circle 7 on Reader Service Card

## IT'S THE LAW

### Joint rate may supercede local rate

In several cases now ICC has ruled that if an unrouted shipment is tendered to a carrier who is a party to a two-line joint rate lower than his single-line rate, he is obliged to forward the shipment over the joint two-line route.

### ICC OK's freight forwarder rates

AN ICC Examiner has upheld rates set up by Midland Forwarding Corp. from Chicago and St. Louis to destinations in Missouri and Texas. He ruled they were just and reasonable, and did not form destructive competitive practice.

### Keep notes off lading bills

Carriers may refuse shipments with special notes on their bills of lading. Many shippers attempt to cover themselves with special instructions, deadlines, etc., on the bill of lading. Under a new ruling the carrier is not obliged to accept the shipment if he feels the instructions are beyond reasonable limits. It then becomes the responsibility of the shipper either to omit the special note restriction or to find a carrier who will accept the shipment under those conditions.

### Commission challenges permit ruling

ICC disagrees with the ruling of Western District Court of Missouri calling for five statutory tests for eligibility for contract carrier (*T-J Transport Co. v. United States*, no. 12497). The court overrules a prior Commission ruling. It contends the 1957 amendments to Sec. 203(a) 15 and 209(b) of the ICC Act require the Commission to grant contract carrier permits without regard to the fact that existing common carriers are able and willing to provide adequate service to the shipper. ICC disagrees, will take the case to the Supreme Court.

### Court sanctions contract carriers on basis of need

A 3-man Federal court ruled that ICC must permit contract carrier operation on the basis of efficiency and the economy to the shipper. This tailored service cannot be denied a shipper in instances where common carriers cannot meet his needs.

### ICC won't help States collect taxes

The Commission, in Ex Parte MC-60 (Proposed Rules or Regulations to Aid States in Collecting Taxes from Interstate Motor Carriers), denied the State of Ohio assistance in collecting axle-mile tax from interstate motor carriers. ICC claimed state officials have conventional procedures available for collecting taxes.

## NEW PRODUCTS

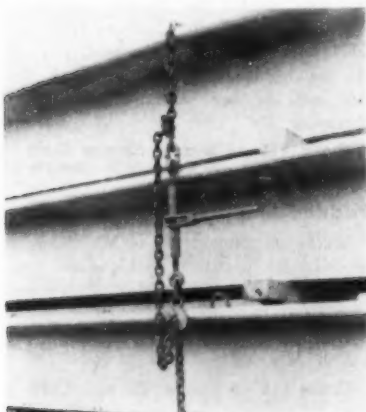
Continued from page 11

to form a flexible sandwich, can deflect up to 20 inches under 30,000 lb load (minimum breaking strength). Fit any flatcar in the world. Installation is easy; no accessories or modifications needed. Approved by armed forces and AAR for shipping missiles.—*Lord Mfg. Co.*

Circle 106 on Reader Service Card

### Load Binder Stresses Ease

Lebus load binder is ratchet-operated, designed to tighten hold-down chains. Simple construction, no bolts or nuts to loosen,

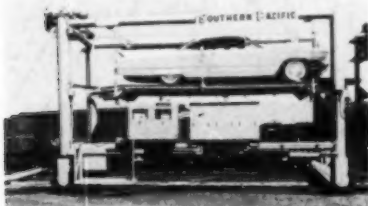


no cheater to tighten bind. Lightweight but strong enough to break even highest chain. 8" takeup. Model R-7 for  $\frac{3}{8}$ " chain, R-2 for  $\frac{1}{2}$ " chain, R-C for  $\frac{5}{8}$ " chain.—*Crosby-Laughlin Div.*

Circle 107 on Reader Service Card

### Moves Autos or Other Loads

Paceco Auto-Packer mobile elevator is designed for fast loading and unloading of tri-level rail cars. Also cuts costs for



handling other loads with rail cars or trucks. Self-propelled, it can drive anywhere in the freight yard. Straddles vehicle bed to pick up or deposit. Safety controls monitor all motions. Several options available.—*Pacific Coast Engineering Co.*

Circle 108 on Reader Service Card

### Uses Less Strapping

Model TH tensioner takes strapping directly from the coil. Said to save a foot

of strap every time it's used. It's fast, has a self-energized feed wheel that holds



high tension. Uses any type seal. Seal can be placed ahead or behind tensioner. Takes strap from  $\frac{3}{4}$ " to  $1\frac{1}{4}$ ".—*Signode Steel Strapping Co.*

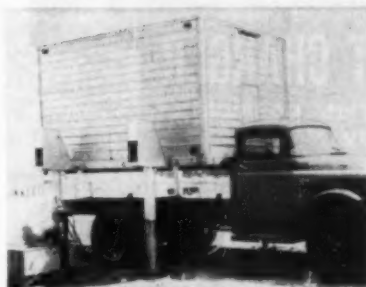
Circle 109 on Reader Service Card

### Low-Cost Grain Unloader

Said to cost 1/10th as much as car dumpers. Superior Boxcar Unloader hangs from an overhead monorail. The rail moves into open grain car through the door. Unloader has folding conveyor wings as wide as the car; one for each end of car. They work separately or together; feed grain at high speed through the door into the track hopper. Sections retract when car is emptied. Unloads 4 cars per hour, including time for spotting, removing doors, clean-up.—*The Superior Co.*

Circle 110 on Reader Service Card

### Truck-Container Transfer System



Load van bodies on and off truck chassis economically and with little fuss. Four hydraulic lift posts raise the body at the fork lift slots. Any capacity available. Posts can be spaced to fit any size container body. Since nothing is attached to truck or container, there is no addition to truck hauling weight.—*Stanray Corp.*

Circle 111 on Reader Service Card

### Pallet For Irregular Shapes

Stack-On Pallet handles, tiers, transports irregular shaped products in groups. Legs are demountable, are double braced and come in various lengths. There are no nuts or bolts, legs slip into pockets quickly and securely. Sizes: 42" x 60" and 42" x 48".—*Johnson-Flaherty.*

Circle 112 on Reader Service Card

Continued on page 36

Circle 52 on Reader Service Card

**FOR LOW COST MATERIAL HANDLING**

**USE... BIGELOW-GARVEY COLLAPSIBLE TIGHT-CORNER PALLET BOXES**

**THEY'RE REUSABLE**

- Economical
- Safe and Neat
- More Convenient
- Quickly Assembled
- Handles up to 5000 lbs.
- Collapsible When Not in Use
- Specially Made For Your Needs

Over 33 Years Material Handling Experience

Write for complete details and prices to...

**BIGELOW-GARVEY**

lumber company

326 W. HURON STREET - CHICAGO 10, ILLINOIS

**The Man Who Knows Casters Best Knows...**



Until the new, complete DIVINE CATALOG is ready, a copy of its condensation, "THE BEST OF DIVINE" is yours for the asking. Simply clip this advertisement to your letterhead and mail to:

**DIVINE BROTHERS CO.**  
200 SEWARD AVENUE  
UTICA 4, N. Y.

Circle 17 on Reader Service Card

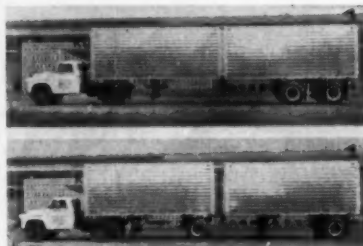
## NEW PRODUCTS

### One Man Dumps Boxes

Pick-up and dumping of centrally located steel containers speeded up throughout entire route by Pak-Gainer. Open-jawed, self-catching hooks on lifting arms eliminate jockeying truck to engage lifting ears on container, maker says. Handles containers from 1 cu yd through 6 cu yd capacity. For wet and dry refuse. Many other features.—Cobey Corp.

Circle 113 on Reader Service Card

### 40-ft Trailer-Container Splits to Two 20's



Van-type containerization body, Twin 20, consists of a 40 ft. tandem axle trailer.

container that splits into two 20-ft containers. Interchanges freely between road, rail, and steamship. Couplings at four corners lock the two boxes together, break easily to separate. Adjustable and removable underconstructions. Proposed ASA corner castings are standard. Good for dry freight or refrigerated loads.—Fruehauf Trailer Co.

Circle 114 on Reader Service Card

### Loose Load Seals Car Bulkhead

For hard-to-control, loose loads like potash, rock salt, fertilizer. Weight of material, as it moves, presses the extended sides of flexible steel-reinforced bulkheads tight to car walls. Load movement is then restrained. Said to install in 1/4 the time needed for wooden bulkheads. A pair weighs 70 lb. Nothing spills out when car is opened. To unload, you cut the bulkhead bottom to top; tack the cut ends to car walls.—Signode Steel Strapping Co.

Circle 115 on Reader Service Card

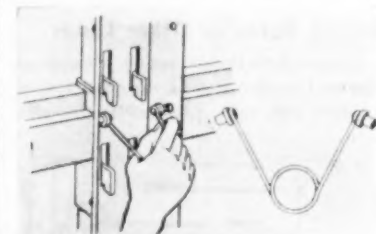
### Padded Shipping Bags In 4 Sizes

Maker has added them to line. They're intended for packaging publications, bottled liquids, men's clothing accessories, slide rules, hardware, and the like. Sizes range from 6 1/4" x 14 1/2" to 12 1/2" x 14 1/4".—Jiffy Mfg. Co.

Circle 116 on Reader Service Card

### Positive Locks For Storage Racks

Ridg-U-rak storage rack beams and upright posts lock positively by means of Pinch Pins. Pins snap into matching



holes in columns, engage hook pads to stop all vertical movement. They're easily removed for respacing of beams. You compress them with your hand. Once in place the pins turn up or down, nest inside channel out of sight.—Bernard Gloekler North East Co.

Circle 117 on Reader Service Card

### Boxed Goods Lifted by Lid

Lift-A-Pliance attachment for lift trucks picks up and stacks neatly without pallets six cartoned refrigerators at a time. A blade slides up between the side of the carton and the side of the lid for the

## OVER THE YEARS—

... MANY IMPROVEMENTS in design and engineering have been incorporated until

# today...the HOBART CHARGER

is built to give you the highest possible battery charging efficiency

Picture: courtesy Mutual Grocery Company, Richmond, Cal.

Mutual Grocery Company selected electric trucks with the idea in mind that electricity provides smooth operation and noiseless power—and without toxic fumes to contaminate the food supplies. They geared their materials handling equipment to fit their requirements—the small stand-up rider platform trucks show surprising results in moving a wide variety of material—whereas fork lift trucks are used for stacking and truck loading. Why not

find out as Mutual Grocery Company did that the right battery charged with the Hobart motor generator will give you long life, adequate power, and little maintenance trouble.

These built-to-order, heavy-duty, slow-speed Hobart motor generators convert AC to DC for battery charging. They are tested and matched with the battery specification to provide charging at the correct volt-ampere characteristics and at a high level of efficiency.

#### SINGLE-CIRCUIT CHARGERS

- Permit closer control over the voltage and charging characteristics
- Require less maintenance and provide greater overall charging efficiency
- Provide flexibility for tight space-saving installation, rearrangement and expansion

Make Hobart your first choice for battery chargers. You'll get quick delivery from the factory and immediate follow up service. Your plant engineer, your local electric truck agent and your Hobart distributor—as a team—will be glad to make a survey of your plant facilities and recommend the

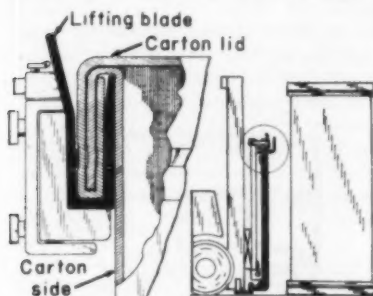
correct material handling equipment. Or, if your present charging equipment is lacking in capacity and your higher capacity batteries are not coming up to full charge, our sales engineer will be glad to recommend proper replacement equipment. Write today for complete information.



Motor Generator Corporation, Box MHI-120, Troy, Ohio  
HOBART BROTHERS AFFILIATE

Circle 33 on Reader Service Card

lift. Boxes are stacked two high and three wide, then all six are high-stacked.



Only lower boxes are engaged by the blades. A plate slides below carton bottom edges for support and to align stacks. Three models handle from one to eight cartons, two have forks that fold when not in use. Blades swivel for exact alignment to carton surface.—Basiloid Products Corp.

Circle 118 on Reader Service Card

#### Sweeps Round the Clock



Model CHD-36 rider-type power sweeper is built ruggedly to take long and hard usage. It sweeps up to 100,000 sq ft per hour at speeds to 6 mph. Hydraulic drive, no gears to shift. One pedal controls movement and speed. Turns in 66" radius, has plenty of power for ramps. Virtually dust-free.—Clarke Floor Machine Co.

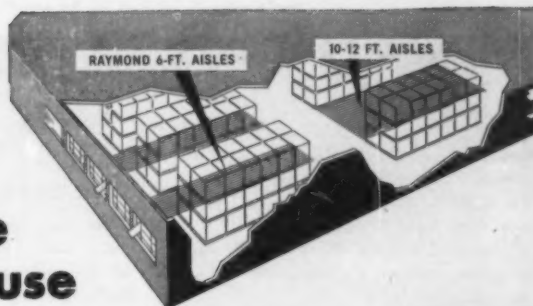
Circle 119 on Reader Service Card

#### Vacuum Lifts A Ton



Handle nonporous materials like stone, sheet and plate steel, and barrels without

Continued on next page



**Increase warehouse capacity . . . as much as 50%**

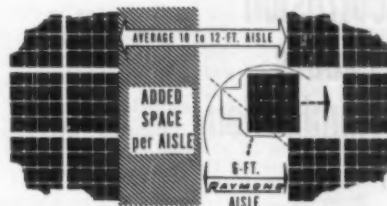
with



### NARROW AISLE Electric Tiering Trucks

**WHY BUILD OR RENT!** There's space to be had right in your present warehouse. RAYMOND narrow aisle trucks eliminate wasteful 10 and 12 foot aisles . . . right-angle tier pallet loads from aisles as narrow as 6 feet! More storage space is gained . . . capacity increased up to 50%.

RAYMOND electric straddle type trucks are extremely compact, have an offset drive wheel with 200° turning radius, permitting close-quarter operation in narrow aisles. 12 and 24 volt models. Capacities: 2,000, 3,000, 4,000 lbs. Low-cost lease/rental arrangements available. Send for bulletin today!



**The RAYMOND CORPORATION**  
30108 Madison St., Greene, N.Y.

( ) Please send electric truck bulletin

( ) Please send information about lease/rental plan

NAME	TITLE
COMPANY	
STREET	
CITY	STATE

Career Opportunities for Product Design Engineers—Write RAYMOND Today!

Circle 38 on Reader Service Card

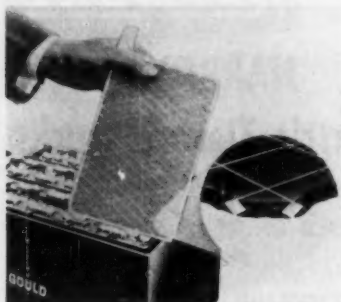
## NEW PRODUCTS

hooks, clamps, or slings. Vac-U-Lift's vacuum Pad Pac is entirely self-contained, lifts 1,200 lb with a 16" diam pad. Other pads vary from 8" diam and 300 lb to 24" diam and 2,400 lb. They all screw on to the standard Powerpac.—*Vac-U-Lift Co.*

Circle 120 on Reader Service Card

### Battery Plate Improved

Gould's Siliconic battery plate is made by a patented process. Result is said to be 10-25% longer life and improved electrical characteristics. Self-discharge is said to be less over long idle periods. All



trical characteristics. Self-discharge is said to be less over long idle periods. All

models of the Thirty and Kathanode lines are available with the plate.—*Gould-National Batteries, Inc.*

Circle 121 on Reader Service Card

### Lifts, Stacks, Tilts Drums

For fast operation in narrow, crowded drum aisles. Big Joe rotates drum 360° for low or high level pouring—up to 130" high. Operation is simple, safe, accurate—use unskilled labor. Tilt-pouring is ground controlled. Features 12-volt hydraulic lift, handles 1000 lb.—*Big Joe Mfg. Co.*

Circle 122 on Reader Service Card

### Lifts Heavy Coils

Mobile steel strap dispenser ends lifting coils; needs little effort to move them. Model 416 handles 3/8" through 3/4"-wide vibrated wound flat strapping and all sizes of oval steel strapping. It's 10 1/2" wide; fits narrow aisles. Tray on handle carries seals and tools.—*A. J. Gerrard & Co.*

Circle 123 on Reader Service Card

### Stop Danger, Save Time

Operator's weight depresses spring loaded Safety Ladder Truck to floor. Rubber tipped feet provide positive brak-

ing, prevent accidents. When operator steps off ladder it returns to up position,



releases truck for movement. Safety tread steps for firm footing. Use it for quick, easy order picking from high shelves. No need for separate ladder.—*Nutting Truck And Caster Co.*

Circle 124 on Reader Service Card

### Baskets Stack, Save Shelving

Nestier metal baskets nest and stack compactly one atop another, need no shelving. You get efficient use of floor space plus good housekeeping. Protect parts from damage with ready access and visibility. Made of sheet metal, perforated or not, and from expanded metal for degreasing.—*Nestier Co.*

Circle 125 on Reader Service Card

## This caster

- beats corrosion
- routs contamination



Here's a caster you can steam clean without (a) corrosion or (b) loss of lubricants.

It's one of Bassick's "BS" series, swivel, or "BT" series, rigid, casters. They're corrosion resistant, effect important maintenance savings under corrosive conditions—in chemical plants, food processing plants, laundries, or wherever casters are exposed to the elements.

And, they're specially designed to avoid contamination to environment: No nooks, crannies, cracks, or recesses to hold dirt. Completely sealed bearings.

Bassick "BS" and "BT" casters come with 5" and 6" wheels with a variety of 2" soft treads. Load capacities to 410 lbs. per caster. Write for complete data. THE BASSICK COMPANY, Bridgeport 5, Conn. In Canada: Belleville, Ont.

"BS" series, swivel-type, similar "BT" is non-swiveling.



Circle 4 on Reader Service Card



ROWE — Adjust-A-Dock



ROWE — Adjust-A-Truck



ROWE Double leaf crossover bridge

## Select the Best... from ROWE's complete line of

- Dock and truck leveling devices
- Crossover bridges

Over 80 standard electro-hydraulic and air-oil powered dock level devices with 10,000 or 20,000 lbs. capacities and 6 mechanical, truck actuated units with 20,000 lbs. capacity are now available.

Electro-hydraulic truck levelers installed where space is limited, available in 40,000 lb. capacity.

Crossover bascule type bridge electro-hydraulic operated in either double or single leaf units. Capacities to customers specifications.

**ROWE METHODS, inc.**

WRITE FOR  
DETAILED  
LITERATURE

2534-T Detroit Ave.

Cleveland 13, Ohio

Circle 41 on Reader Service Card

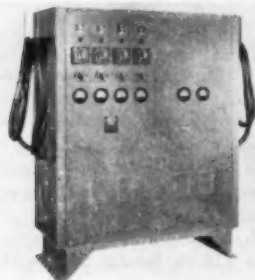
HANDLING & SHIPPING ILLUSTRATED

## Truck Bends, Elevates

Here's a platform truck for heavy loads in close quarters. It bends in the middle. Erickson unites platform and tractor with an articulated steering joint. Truck bed may be unusually long, still handles with ease. Simplified steering pivot said to reduce wear and need for service. Power steering standard. Speeds to 25 mph, automotive controls. Draw-bar pull to 3,200 lb.—Erickson Power Lift Trucks, Inc.

Circle 126 on Reader Service Card

## Automatic Battery Chargers



The Motor Generator Corp. has a full line of Hobart Portapak and Monitor style chargers. The chargers are motor-generators with circuits for four batteries.

Continued on next page



## Self-Dumping Hoppers permit fast scrap handling

The scrap disposal job is no headache for the Goss Printing Press Co., Chicago. They discovered a way to convert an inefficient salvage operation into a fast, economical scrap disposal procedure. Forty-one Roura Self-Dumping Hoppers, mounted on casters, are located throughout their plant serving as scrap containers. When the scrap-laden Hoppers are ready to be emptied, they are easily

pushed into an aisle. A standard lift truck carries them to a waiting freight car. There, with a flip of a latch, each Hopper dumps itself . . . rights itself . . . locks itself . . . and is quickly returned to its station.

Versatile Roura Self-Dumping Hoppers are cutting costs throughout industry, handling hot or cold, wet or dry bulky materials.

**ROURA**  
Self-Dumping  
HOPPER

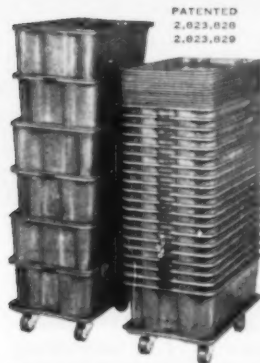


WANT MORE DETAILS? Attach this coupon to your letterhead and mail to

**ROURA IRON WORKS, INC.**  
1408 Woodland Ave., Detroit, Michigan

# Lewis Containers

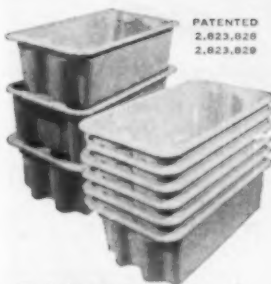
**SOLVE EVERY HANDLING PROBLEM**



PATENTED  
2,623,620  
2,623,629

## PLASTIBOX UNITIZED ASSEMBLY CONTAINERS

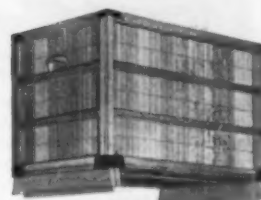
One piece, molded plastic. Strong, smooth, non-corrosive, easily cleaned. Stack securely and afford maximum storage of parts; 4 sizes in green or yellow. Accessories are available for a wide variety of bench or wall mounting. Truck assembly allows boxes to be quickly moved. Shipment within 24 hours from receipt of order.



PATENTED  
2,623,620  
2,623,629

## WOVEN WOOD-AND-WIRE HANDLING CONTAINERS

Tough, resilient wood-and-wire webbing is combined with a select hardwood frame, jointed at corners and reinforced with steel corner irons . . . here are husky, long-lived, big capacity containers available in many sizes and styles, including trucks and collapsible boxes. Designed for single or multiple handling with modern handling systems and equipment. One to three week delivery.



WRITE TODAY  
for illustrated brochures on the complete Lewis material handling container line.

## Stack-n-Nest® TOTE PANS

Only Lewis Stack-n-Nest tote pans stack and nest, within their own dimension, without any mechanical gadgets. Molded in one piece of Fiberglass reinforced polyester . . . can't dent, rust, rot or warp. Available in 8 sizes from 16"x10"x5" to 34"x24"x19", in grey, green, and red. Accessories include pan covers and 4-caster dollies. Shipment within 24 hours from receipt of order.



## PolyLewton FOOD HANDLING PANS

Stack-n-Nest pans are available in this remarkable material developed for raw food handling. The glass-like surfaces are easily cleaned, have no crevices to harbor bacteria. Inside dimensions are 20"x12"x8", weigh 3 3/4 lbs., handle up to 50 lbs. Shipment within 24 hours from receipt of order.

G.B. **Lewis** COMPANY

712 Montgomery Street, Watertown, Wisconsin

Circle 23 on Reader Service Card

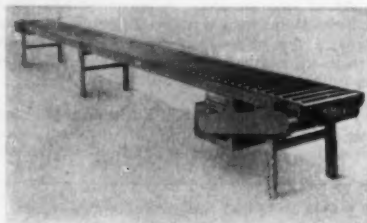
## NEW PRODUCTS

ies. Capacities range to 15 KW. Controls are fully automatic, cut off at full charge, then shut machine down. Monitor type follows modified constant potential charge curve. Portapak cuts in a timer for the last three hours of charging when battery is three-quarters charged. Circuits individually controlled.—*Motor Generator Corp.*

Circle 127 on Reader Service Card

### Conveyor Matches to Load

Unibilt EP series uses conveyed weight to adjust belt tension to the load. There's no need for manual settings; power is

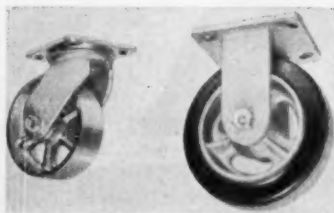


saved. Good for holdback or deflection loading and unloading. Choice of widths, roll spacing, lengths. End drive and center drive standard. Unibilt conveyors are

built from standard, components that interchange between different conveyor types in Conveyor Specialty's line.—*Conveyor Specialty Co., Inc.*

Circle 128 on Reader Service Card

### Put It on Wheels



Economical, medium-duty casters are available in Albion's Series 16 line. Recommended for medium-duty trucks and dollies, box or platform trucks, laundry baskets.—*Albion Industries, Inc.*

Circle 129 on Reader Service Card

### Speeds Scrap Handling

Dumping chips, scraps, waste, or small parts directly from a side-loading dump cart is speeded up by use of hoist frame with a trigger release. Frame latches easily and securely to cart. A push on the trigger overturns cart. It swivels 360° at dumping height, completely empties.

Model 43D cart carries 500 lb; has low side for easy loading.—*Coolant Equipment Corp.*

Circle 130 on Reader Service Card

### Snow Plow Attaches

Fits maker's F-10 platform truck. Fifty-inch blade raises easily for good travel clearance; no changeover delays. Plow said to perform equally well in wet or dry snow. Eliminates cost of special snow removal equipment. Lateral arms absorb side thrust.—*Prime-Mover Co.*

Circle 131 on Reader Service Card

### Mark Aisles, Paint Stripes

Friction-driven, noiseless; needs no gas or electric motor. One-man operation. Paint flow positively controlled; there are no valves or nozzles to clog. Cleans easily; stores in little space. Rollers interchange. Sizes from 1" to 4" wide. Paints straight lines, circles, curves; will mark on turf or earth.—*R. E. Muncy, Inc.*

Circle 132 on Reader Service Card

### Got a Handling Problem?

Chain conveyors often solve difficult handling problems. They adapt easily to production speeds, offer selective stor-

**YOUR GOOD PRODUCT  
DESERVES TO BE SHIPPED  
with THE PROPER MARK**

#### MARKING RULE 6 says:

freight must be stenciled or otherwise durably and plainly marked.

**DURABLY** means in a durable manner; lasting in spite of hard wear or frequent use. (You get durability with D-B ROL-IT-ON stencil inks.)

**PLAINLY** means easy to read. The marking should be as large as possible. (There is a D-B stencil machine in a letter size to meet your every marking need.)



FOR FURTHER  
INFORMATION  
WRITE...

**DIAGRAPH-BRADLEY INDUSTRIES Inc.**  
P. O. BOX 269 HERRIN, ILLINOIS  
DISTRIBUTORS IN ALL PRINCIPAL CITIES



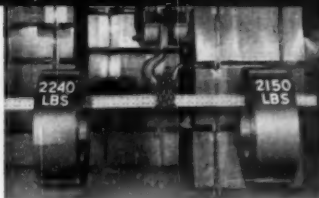
Circle 9 on Reader Service Card

## 4 reasons why you should use Equipto Angle...

#### 1. STRONG —

Combinations of Equipto Angle can be used to insure proper structural strength to support any weight.

(Photo shows demonstration of strength, not a product application)



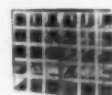
#### 2. FAST —

Equipto Angle is marked every 3" for accurate cutting. One stroke cutter positions and cuts angle to correct length.



#### 3. SIMPLE —

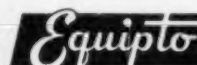
Equipto Angle is exceedingly swift and easy to assemble. All you need is a wrench.



#### 4. INEXPENSIVE

No welding... Hot dipped galvanized finish. Can be dismantled and reused again and again.

May be used for building stairs, guard rails, ladders, racks, etc. Available in 2 sizes, 2 gauges, in 10 or 12 ft. lengths, 10 pieces to a bundle including nuts and bolts. Write for free IDEA BOOK 299.



806 Prairie Avenue  
Aurora, Illinois

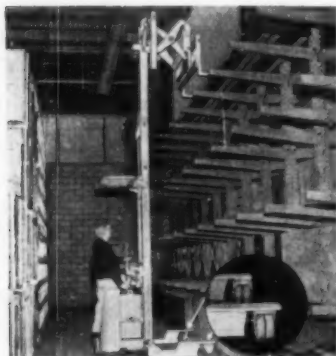
Circle 20 on Reader Service Card

HANDLING & SHIPPING ILLUSTRATED

age, automatic dispatching, recirculation, and will repeat cycles.—Chainveyor Corp.

Circle 133 on Reader Service Card

### Use Narrow Aisles



You can stack heavier loads higher along space-saving aisles with trucks from Raymond's line of electrics. There's a 4-D narrow-aisle model that moves in any one of four directions from a standstill.—The Raymond Corp.

Circle 134 on Reader Service Card

### Carries Ton, Steers Easy

Hamilton's model 4200 Milwright truck steers safer and easier. It has a compact

forged steel 5th wheel that rides on precision bearings. The truck is one of 6 basic 5th-wheel steer trucks with capacities to 10,000 lb.—Hamilton Caster & Mfg. Co.

Circle 135 on Reader Service Card

### Battery Dependability

Bowers Five-Clad industrial truck batteries have plate insulation five layers deep, said to reduce shedding to a minimum. In addition, special alloys in plates and grids promise greater protection



against overcharging and corrosion. Special quality-control during manufacture makes certain all plates weigh alike.—Bowers Battery and Spark Plug Co.

Circle 136 on Reader Service Card

## As Little as \$285 Makes Your Hoists and Cranes Into Fork Lifts



You can now handle pallet, coil and other unit loads where fork trucks are too expensive or impractical. America's foremost industries are saving thousands of dollars in first cost; handling cost, operating cost and maintenance cost with Cady Pallet, Coil, and Pipe Lifters. Repeat orders are proof of satisfaction. Counterbalanced to hang level, they are easy to use and reduce nonproductive handling costs in plants, in yards, on docks and on job sites. Standard Pallet Lifters up to 10,000 lbs. capacity, Coil Lifters up to 40,000 lbs. capacity, and Pipe Lifters up to 15,000 lbs. capacity. Custom models to fit special conditions. Write or phone for helpful application recommendations.



**CADY METAL FABRICATING, INC.**  
85 Schenck St. N. Tonawanda, N. Y.  
NX 2-4145

Continued on next page.



### LPG-ELECTRIC!

**NEW BANTAM MODEL W12  
POWER UNIT FOR ELECTRIC  
POWERIZED HAND TRUCKS**

Ready-Power combines full electric power with no fatigue AND the economy and low maintenance of LP-gas in one compact new power unit. Installation is easy on any make of motorized electric hand truck with adequate sized power compartment. Unit accommodates an interchangeable 20-pound fuel cylinder, includes a quick-disconnect fuel line coupling for safety, has removable end, side and cover plates for easy accessibility. LP-gas components are listed by Underwriters' Laboratories and comply with Factory Mutual recommendations. Write for information.

### READY-POWER

The READY-POWER Co., 3844 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

Circle 39 on Reader Service Card

## MAN IN MOTION

... HOLDING  
THE LINE  
ON DOCK  
LOADING  
COSTS



Down goes a Magliner, down go costs! . . . and they stay down with Magliner Magnesium Dock Boards on the job! Magnesium light for one man handling . . . magnesium strong for rugged service . . . Magline-designed to keep loads in motion . . . safely, smoothly, economically! Send today for your copy of "Difficult Dock Problems"—the bulletin that helps you spot and correct high-cost dock loading problems.

Request Bulletin DB-204, Magline Inc. P.O. Box 1012 Pinconning, Mich.

**MAGLINER  
MAGNESIUM DOCK BOARDS**

Circle 27 on Reader Service Card

## NEW PRODUCTS

### Hoist on Ladder

Hoisting ladder has a self-dumping hopper for sand, gravel, other bulk loads. Speeds up-the-ladder movement at job



sites. No special skill to operate. Made of aluminum alloy. Includes foot control, friction clutch to hold load at any point, manual drag brake to control descent. Gasoline or electric power.—*Bush Mfg. Co.*

Circle 137 on Reader Service Card

### 1 Truck Does Work Of 3

Jiffy-Lift installed on a truck rapidly loads and unloads heavy, bulky materials

such as cement blocks, bricks, pipe. It's a sturdy, hydraulic loader with 10,000 lb lift capacity. Self-propelled by gasoline engine. One man runs it. Easily installed or removed from truck.—*Elberfield Mfg. Co.*

Circle 138 on Reader Service Card

### Throw Away Pallet

Expendable Econ-O-Pallet looks and loads like conventional pallets, handles with conventional equipment, is so inexpensive it may be shipped with the load with no deposit or return agreement, says the maker. Holds 28,000 lb; weighs less than 7 lb. Assembled in less than a minute; no staples or glue used. Moisture resistant.—*Materials, Inc.*

Circle 139 on Reader Service Card

### Winch Is Different

Model CL hydraulic winch separates power and storage functions of winch drums. This results in loads, speeds, torque, and horsepower that are constant, according to the manufacturer. Cable is pulled in by 2 power drums; a storage drum gathers it up. Rated at 12,000 lb; said to outperform regular 20,000 lb units.—*Motor Products Corp.*

Circle 140 on Reader Service Card

### Stop Exhaust Smoke

Oxy-Catalyst exhaust purifiers eliminate much of the carbon monoxide and other impurities expelled into the air by gas and diesel engines, says the maker. The purifiers attach to the engine, catalytically change CO gas into harmless CO<sub>2</sub> and water. Permits vehicles to operate indoors, underground, in confined spaces without noxious fumes or haze.—*Oxy-Catalyst, Inc.*

Circle 141 on Reader Service Card

### Different Bag Construction

Poly-Ply Multiwall bags feature structure that has a separate, intermediate ply. It isn't a liner, according to the maker.



The ply is made of light-weight sheet polyethylene, spot-pasted top and bottom to layers of heavy duty kraft paper that shield it. The film is not next to the product; is protected from abrasion, other

### MARTIN-DECKER REMOTE INDICATING "SENSATER" Crane Scale

Accurate, convenient "eye-level" reading regardless of load or hook height. Available for a fixed installation or hand truck mounted for portability. The reliable, time-proven "Sensater" load element, connected to a full-scale, remote dial by up to 50 ft. of flexible double-wire braid hose, brings overhead weighing indication where you want it. Capacities 1,000 lbs. to 50,000 lbs.



### MARTIN-DECKER "SENSATER" CRANE SCALE

Compact, low headroom loss, Crane Scale. High safety factor, low cost, light weight, accurate. Ideally suited for overhead weighing where operator has easy access to the indicator. Weigh during the normal handling operation, not as a separate, time-consuming function. The money saved is yours. Capacities 1,000 lbs. to 50,000 lbs.



Low Cost ■ Easy to Read ■ Compact ■ Easy to Handle  
High Safety Factor (5 to 1) ■ Lightweight ■ Accurate

**MARTIN  
DECKER**

WRITE FOR DESCRIPTIVE BULLETIN 34-V  
MARTIN-DECKER CORPORATION  
3431 CHERRY AVENUE, LONG BEACH 7, CALIFORNIA



Precision Pressure Instruments—Testing—  
Weighing—Load and Force Measurement.

Circle 53 on Reader Service Card

### New MOTO FLOW FREIGHT CONVEYOR

- INCREASES USEABLE FLOOR SPACE
- EASILY MOVES 2000 LBS.
- HANDLES ASSORTED AND PALLETIZED LOADS
- INSTALL AT ANY ANGLE
- SAVES HOURS OF LABOR



Your profits go up... handling costs down with Moto Flow, a fast, efficient, and safe system for floor-to-floor material handling both inside and outdoors.

Easily turns a limited use upper floor or basement into a productive, fully useful area. Send for complete details today.



M-B CORPORATION

M-B CORPORATION

New Holstein, Wisconsin

QUALITY EQUIPMENT SINCE 1907

Circle 24 on Reader Service Card

HANDLING & SHIPPING ILLUSTRATED

injury. Bag was originally developed for shipping salt.—Chase Bag Co.

Circle 142 on Reader Service Card

### Hoist Overload And Slack Protection

When electric hoist is overloaded, limit switch cuts off the power. The switch also prevents excessive cable unwinding when spotting blind loads. It works on 5 to 10 lb overload. Any interference with load makes switch cut off power, keeps cable from unreeling with consequent piling on rewind. Won't interfere with normal operation under prescribed load capacity.—Shepard Niles Crane & Hoist Corp.

Circle 143 on Reader Service Card

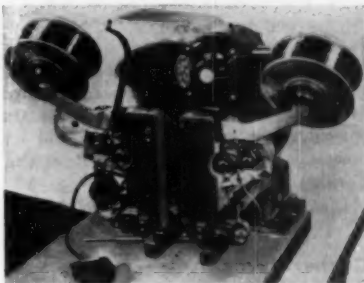
### Tire Picking Without Unstacking

With Hi-Line storage racks, 4 corners of pallet are open. You can pick from any pallet without disturbing those stacked above. Eight leg design gains max strength, max stability, min weight, according to manufacturer. Each unit stores 45 tires in 48" height, and erects easily. There are 2 methods for securing racks to pallets: one knocks down to save space, the other mounts permanently.—Warehouse Storage Systems Co.

Circle 144 on Reader Service Card

### Stapler Has 2 Heads

Adjustable dual head Wire Stitcher makes and inserts 2 staples at once from coils of wire. Fastens materials to  $\frac{3}{8}$  in.



thick. Heads adjust from  $3\frac{3}{4}$  in. to 9 in., center to center of staples. Machine is portable; has throat depth of 10 in.—General Staple Co.

Circle 145 on Reader Service Card

### Bulk Handling Is Easy

Handle small parts easily; store and transport them conveniently. Junior Palletainers have hinged sidegates for easy access and clear visibility to contents even when stacked. Sturdily made of steel rod, welded with  $1\frac{1}{8}$ " mesh openings. 500 lb. capacity.—Union Steel Products Co.

Circle 146 on Reader Service Card

Circle 16 on Reader Service Card

## MR. DISTRIBUTOR:

Cash  
In On  
Those  
Spot  
Sales!



Stock And Display The  
Popular Line of  
**DICO HAND TRUCKS  
and DRAIN STANDS**

"E-Z ROCK"  
(one man loader)  
Barrel  
Drain Stand



MODEL 72RB



The Original  
"FLOAT-AWAY"  
Barrel  
Truck



Combination bag and warehouse truck (two trucks in one). Nose plate drops down for bags. Pays for itself—smooth surface won't tear bags.



**WANTED!**  
Aggressive stocking distributors  
for the modern line of Dico Hand  
Trucks, Barrel-Handling Equip-  
ment and Industrial Wheels.

**DICO**

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DES MOINES 5, IOWA

**SMOOTH...  
SWIFT...  
SAFE...  
SILENT...**

## ELECTROLIFT WORM-DRIVE HOISTS

Dependable, long-lasting ElectroLift hoists are used by the thousands in America's largest manufacturing plants. Features of these units—ranging from  $\frac{1}{4}$ - to 10-ton capacity—include:

- Worm-drive design for safe, sure braking action
- Use of quality components and materials for trouble-free performance
- Fully enclosed motor and gearing for clean, quiet operation
- Greater compactness for close headroom, safer action

For details on speed, models and operation, consult your classified directory for the ElectroLift representative nearest you.

**ELECTROLIFT**  
HOISTS

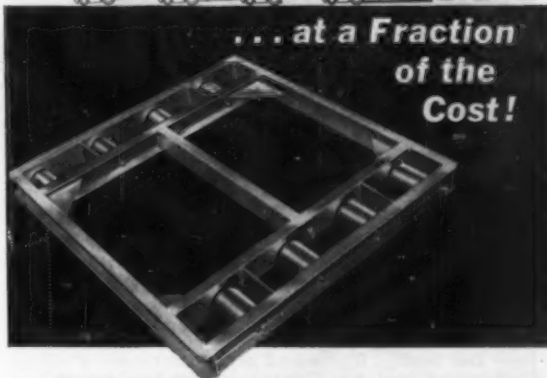
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204 Sargeant Avenue

Clifton, N. J.

Circle 19 on Reader Service Card

## Power Truck MOBILITY



...at a Fraction  
of the  
Cost!

**MAGLINER MAGNESIUM PALLET DOLLIES** free-up your power equipment for the big jobs and longer hauls. Put a Magliner under every pallet load and its ready to roll... quickly, easily, economically. A small investment that pays big dividends, Magliners are the practical solution to loading bottlenecks... high loading costs. Made of magnesium, Magliner pallet dollies are easily handled by one man... carry loads up to 4,000 lbs., safely, smoothly on large  $3\frac{1}{4}$ " rollers.

Tough, rugged, welded magnesium construction. Dependable, long-life service! 14 standard models and sizes.



Put it on  
a Magliner  
and Keep it  
Mobile

Write for Bulletin P8-1

Magline Inc. • P. O. Box 4212 • Pincenning, Mich.

Canadian Factory—Magline of Canada Ltd., Barrow, Ont.

Circle 26 on Reader Service Card

## USEFUL LITERATURE

### Cast in Bronze

Literature just off the press tells you about Glue Fast large label gluer. Models available for labels up to 12½" wide. Gives quick, neat, and efficient gluing even for diecut labels. No glue ooze at edges. One-hand pushbutton action. Made of bronze to stand up under shock, also to make it heavy enough to stay stationary without bolting.—*Glue Fast Equipment Co. Inc.*

Circle 200 on Reader Service Card

### Reinforced Plastic Tanks

Completely weather-proof, they require no painting. Maintenance is eliminated. These corrosion resistant, reinforced plastic tanks are for use in the chemical and allied industries. The Kabe-O-Rapp tank consists of a fiberglass reinforced plastic tank shell. It's helically wound with stainless steel cable. Because the tank may be made translucent, there is no need for gauging to determine content level. For varied applications, they may be

molded into complex shapes. Tanks are bonded at the erecting site by a cold set process.—*Metalweld, Inc., M-W Protective Coatings Div.*

Circle 201 on Reader Service Card

### Corner-Pad Cushions Suspend Loads

Bulletin on Hardi-Pads describes unique cushioning system consisting of corner pads made of polyurethane foam. Three cubes held together by corrugated backing and rubber tubing form a sleeve for each corner. Sleeves at all eight corners of box completely suspend it. Literature explains advantages, specifications.—*Hardigg Industries*

Circle 202 on Reader Service Card

### Wall Chart Tells How to Mark Shipments

Shipping room information on how to mark packages is yours for the asking. A 17" x 11" wall chart, Form MR-60,

outlines Marking Rule 6 of the Association of American Railroads and the American Trucking Association. Also other essential marking data such as export markings, conversion equivalents, and military marking specifications.—*Proper Marking Association*

Circle 203 on Reader Service Card

### Highway Trailer Lifts Its Own Load

Literature on Strad-O-Lift trailer tells you how it works. It straddles load, lifts it off of ground, and carries it at highway speeds to any destination. Handles any unitized loads. Fits all standard truck tractors. Two different lengths, both with capacities of 40,000 lb.—*Strad-O-Lift Div., Air Mac, Inc.*

Circle 204 on Reader Service Card

### Truck Hardware Catalog

The complete line of Eberhard hardware for trucks and delivery vehicles of



**MAGLINER MOBILE LOADING RAMPS** go where you go... provide a loading dock where you need it, when you need it! Magnesium-light construction for easy one man handling—anytime, anyplace. The result: easier work, happier men... lower cost loading! If you load or unload trucks or railcars from ground level, you'll want a copy of Magliner's Bulletin—"Everyday Ground-Level Loading Problems and How to Solve Them."

WRITE TODAY FOR BULLETIN DB-211

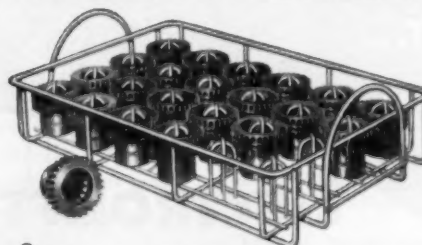
Magliner Inc., P. O. Box 2212, Pinconning, Michigan



**MAGLINER MOBILE LOADING RAMPS**

Circle 29 on Reader Service Card

## EEZY-STAK BASKETS for Better Parts Handling

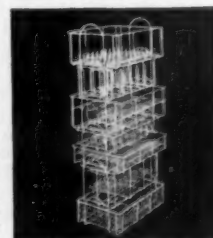


### EEZY-STAK BASKETS SIMPLIFY PARTS HANDLING... CUT COSTS... REDUCE REJECTS!

WIPCO manufactures a complete line of Custom-Designed stacking (Eezy-Stak) and non-stacking baskets for handling all types of parts through every production and assembly process. WIPCO baskets can be made in any desired size or shape, and from any practical material.

Eezy-Stak baskets feature the exclusive Interlock Handle\* which permits easy and safe stacking. Eezy-Staks are available in a wide range of standard sizes and metals which fit most parts-handling requirements. Write today for Bulletin B-54.

\*Pat. No. 2646186



**WIPCO BASKETS... FROM INITIAL MACHINING TO FINAL ASSEMBLY AND SHIPPING**

**WIRE AND IRON PRODUCTS INC.**

1720 SIXTEENTH ST. • DETROIT 16, MICHIGAN

Circle 46 on Reader Service Card

all kinds is described in a 72-page catalog that's yours for the asking. Includes door locks, handles, catches, strikers, rope fittings, hinges, ladder holders, hood fasteners, and others. Complete specifications and photos.—*Eberhard Mfg. Co.*

Circle 205 on Reader Service Card

### 'The Profit Side Of Your Ledger'

Production and mechanical advantages of the Caterpillar D7, D6, and D4 tractors are discussed in this 8-page booklet D004. Owner testimonials show their cost-saving, profit-making potential. Also covered are easy operation, high production, and dependability. Mechanical features include new diesel engines, dry-type air cleaners, lifetime lubricated carriages, and Caterpillar's exclusive oil clutch.—*Caterpillar Tractor Co.*

Circle 206 on Reader Service Card

### Collapsible Shipping Boxes

Just off the press is a booklet describing lightweight shipping boxes made of Ply-Veneer panels. Sides, top, and bottom are held together by wire clamp fasteners to form sturdy boxes. Just remove the clamps to collapse the six walls for return trip. Few panel sizes yield infinite combinations of box sizes.—*Weyerhaeuser Co.*

Circle 207 on Reader Service Card

### 4-Way Printer

Cuts your inventory of preprinted cartons. Belt speed is approximately 35 cartons a minute. Guide rails, turning device are designed to accommodate your full range of cartons. Gives product or code imprinting on 1, 2, 3, or 4 sides of your shipping cartons (top and bottom too) in one pass of the machine. All colors of ink available, holds sufficient ink for full day's run of up to 10,000 cartons.—*Algene Marking Equipment Co.*

Circle 208 on Reader Service Card

### Live Storage Rack

Company says its Versarack saves time, effort, and space to provide neater, more efficient storage and faster order picking with fewer errors. Advantages include: easy inventory control, first-in, first-out storage, less floor congestion, product protection, up to 400% faster order filling.—*M-H Standard Corp.*

Circle 209 on Reader Service Card

### Powered Platform Trucks At Work

Plant conditions and operations where powered platform trucks can reduce costs are described in Bulletin F-10-2. Two general phases, material handling and maintenance and service work are described in detail. "Job Applications For

The Prime-Mover Model F-10" details this low cost transporter.—*The Prime-Mover Co.*

Circle 210 on Reader Service Card

### Electric Truck Advantages

Purpose of this 17-page booklet is to describe and illustrate the major features of the construction and operating characteristics of the battery-electric industrial truck. It stresses what users say about the advantages, with direct quotes.—*Electric Industrial Truck and Allied Products Manufacturers*

Circle 211 on Reader Service Card

### Powered Strapping Tools

Bulletin AD-300, 16 pages, covers powered steel strapping tools which make the application of strapping easier, faster, and more uniform. Illustrations show how powered tools increase packaging speed, reduce operator fatigue, and produce more secure packages.—*Acme Steel Co.*

Circle 212 on Reader Service Card

### Scale Checks Material on the Spot

Bulletin 15E details the Model S Dillon crane scale. With this unit, loads are checked on the spot the instant

Continued on next page

## MORE VALUE for LESS MONEY

FULLY HYDRAULIC

**BT PALLET TRUCKS**

The Lift Truck That  
Costs Less—Works Best

Now **\$350<sup>00</sup>**  
Only

F.O.B. Chicago

Extra rugged construction for Heavy Duty Use. Precision built, BT fork-type PALLET TRUCKS are fully hydraulic, easy to use, highly maneuverable. Pivots 90°, both directions. SKF ball-bearing wheels, (your choice of steel, rubber or bakelite wheels at no extra cost). For single or double face pallets and skids. Lowered Height: 3¼"-5" Lift. A real buy.

#### Model BT-24

2400 lb. Capacity.....**\$350<sup>00</sup>**

#### Model BT-44

4400 lb. Capacity.....**\$395<sup>00</sup>**

WRITE — WIRE — PHONE

#### YOUR CHOICE OF SIZES IN EITHER MODEL:

Fork Widths: 20½" or 27"  
Fork Lengths: 36", 42" & 48"  
(Specify width, length and  
wheel type when ordering)  
(Dealer Inquiries Invited)

**INDUSTRIAL HANDLING EQUIPMENT CO.**

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Circle 51 on Reader Service Card

## There's A Lot to Like in a Magliner...

lighter - stronger - more payload too!

The original magnesium  
hand truck. With a 10-  
year record of proved  
performance.

Try it! Test it! Over 200  
models available. Write today  
for name of nearest dealer  
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**MAGLINE INC., P. O. BOX 3512, PINCONNING, MICH.**  
Canadian Factory: Magline of Canada, Ltd., Renfrew, Ontario

Circle 25 on Reader Service Card

Circle 31 on Reader Service Card

## MLM BRIDGES THE LOADING GAP...



MLM Dock Boards are **LIGHTER . . . SAFER . . . STRONGER . . . BETTER BUILT**

- Self adjusting for varying height of dock and truck bed.
- Exclusive Handholds formed with side-rails. NO CASTINGS!—NO WELDS!
- Safety-tread surfaces for maximum traction . . . minimum accidents.

LET MLM IMPROVE YOUR MATERIALS HANDLING REQUIREMENTS

Dock Boards • Yard Ramps • Lightweight Dollies • Pallet Dollies

**BUILT TO YOUR SPECIFICATIONS!**

Sales Territories Open

Write today for complete information!

**MODERN LIGHT METALS, Inc.**  
Coloma, Michigan  
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## New London PARTS CONVEYOR

**A PRODUCTION PARTNER IN ANY PLANT**



Husky, electric motor drive, 4" to 24" Neoprene cleated belts or wire mesh belts for horizontal or incline operation. Easily handles parts and some bulk materials. Adjustable, detachable undercarriage.

Write for complete information on our entire line of low cost, quality conveyors . . . or name of nearest representative.

**NEW LONDON ENGINEERING CO.**

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Circle 34 on Reader Service Card

## USEFUL LITERATURE

they're lifted. They can be moved directly to production line or stock racks. Weighing and handling are both done in one time-saving operation. Literature gives specifications, shows applications, price schedule, and charts the scale's principle of operation. Lifting hook and attachment eye specifications are also given.—*W. C. Dillon & Co., Inc.*

Circle 213 on Reader Service Card

### Turn-Around Time Cut 40%

Job Study 158 shows Towmotor fork lift trucks at work in the auto industry. At Packard's Engine Plant in Utica, Mich., the lift trucks with notched forks carry full loads in and out of carriers.—*Towmotor Corp.*

Circle 214 on Reader Service Card

### Containers Streamline Casting Handling

Mead Data Sheet No. 26 tells how a casting manufacturer improved handling and shipping of their castings, and developed better customer service. Importance of a 36" x 36" x 24" corrugated pallet-container is stressed. Unloading time is reduced from 5 to 6 man-hours to about 15 minutes, housekeeping is greatly improved, and product identification is bettered. The old storage method and the new storage method are both pictured.—*Mead Containers Div. of The Mead Corp.*

Circle 215 on Reader Service Card

### Pallets and Their Uses

Handy digest size booklet describes pallets and their uses. Titled "A B C of Pallet Handling", it illustrates different types of pallets and explains their uses. Advantages of wood and of metal pallets are listed. Pallet specifications are explained. The 15-page booklet also describes how to estimate pallet requirements by three methods: floor-area, weight, and unit.—*The Raymond Corp.*

Circle 216 on Reader Service Card

### Less Tiring . . . More Production

Company says that those benefits will be yours if you use its air power tensioners and sealers. Folder described eight tensioners, adjustable to supply uniformly the exact strap tension desired from 750 to 3,300 lb (at 90 psi). Seven-pistol grip and double handle sealers are also described. Illustrated stories show the tools in use. Specification charts and descriptions help the packager and shipper select the ideal combination of air-power tools.—*Signode Steel Strapping Co.*

Circle 217 on Reader Service Card

### Paper Handling Conveyor System

System carries a continuous flow of orders, office forms, punched cards, correspondence, blueprints and other lightweight materials from an unlimited number of loading positions to any selected drop-off point.—*Chainveyor Corp.*

Circle 218 on Reader Service Card

### Seals Cases Any Size

Brochure 100-60 describes the Packomatic Omnimatic-Rotopress. It automatically feeds, glues, and seals cases of widely varying dimensions. It takes them at random, and automatically discharges them to as many as five different take-away conveyors.—*J. L. Ferguson Co.*

Circle 219 on Reader Service Card

### Lift Truck for Stevedoring

Bulletin SS-1836 gives specifications for the Utilitrac 8024. This 8,000-lb capacity gas-powered fork truck is built for stevedoring. Comes with cushion tires, power steering, and Clark's Hydrator drive. To ease lifting in and out of ships' holds, the counterweight is quickly demountable.—*Clark Equipment Co.*

Circle 220 on Reader Service Card

### First-in First-out Movement

Photographs, drawings, and diagrams explain the principles, operation, and installations of Rapistan Flow Rack for live storage in an 8-page bulletin. Discusses new snap-on, quick change fittings. Maker says that its system of material storage avoids needless multiple handling and wasted aisle space.—*The Rapids-Standard Co., Inc.*

Circle 221 on Reader Service Card

### Semibulk Handling Container

Folder describes Invert-A-Bin shipping and storage containers for handling flowable dry products. Available in 36, 65, and 88 cu ft sizes. Made of steel or aluminum. Seals hermetically to handle toxic and hygroscopic materials.—*The Powell Pressed Steel Co.*

Circle 222 on Reader Service Card

### Hydraulic Dumper

Two-page brochure covers company's new hydraulic drop-bottom box dumper. It fits any make and model lift truck. Comes furnished with mounting brackets. Capacities are 4,000, 6,000, 8,000, and 10,000 lb. Forks remain unchanged. It dumps all makes of drop-bottom boxes regardless of contents. Brochure details specifications and is illustrated with photographs and diagrams.—*Little Giant Products, Inc.*

Circle 223 on Reader Service Card

HANDLING & SHIPPING ILLUSTRATED

## PEOPLE IN THE NEWS

John J. Gill is new president of American Trucking Associations, elected at the recent ATA convention in New York. Welby M. Frantz, past president, becomes chairman of the board. Clarence A. Kelley was elected first vice president, R. Stuart Moore re-elected second vice president, and Clinton L. Sanders and O. B. English third and fourth vice presidents respectively.

P. W. Perdriau is the new president of B. F. Goodrich Co.'s industrial Products Division. He had headed the Aviation Products Division.

Robert S. Reebie becomes director of industrial planning of New York Central, leaving A. T. Kearney & Co., consultants.

Calvin W. Hunter joins Hartman Metal Fabricators, Inc. as sales manager, leaving Material Handling Products Corp. Chester J. Selden becomes Hartman assistant general manager.

Joseph H. Dolan goes to Brown Trailer Division, Clark Equipment Co., as assistant general sales manager, leaving Chicago, Burlington & Quincy Railroad Co.

Eugene P. Berg is new executive vice president of Bucyrus-Erie Co., leaving Link-Belt Co.

E. M. Scully becomes assistant freight traffic manager (system) rates and divisions, Canadian Pacific Railway.

Jack E. Fathauer moves up to product manager, Speedloader Div., National Malleable & Steel Castings Co. He had been a district sales manager.

Charles S. Reardon steps in as executive vice president and general manager of Midwest Freight Forwarding Co. Inc., leaving his post as operations vice president of Ringsby Truck Lines.

Circle 45 on Reader Service Card

## TRIAL SAMPLES Of World-Famous WHITMORE'S Lubricants



### OPEN CHAIN LUBRICANT INCREASES CHAIN LIFE UP TO 300%

Penetrates, lubricates, prevents rust. Lubricates deep into chain linkage to reduce friction on pins, rollers, bushings, pressure surfaces. Corrosion inhibitor prevents rust in vital working mechanisms. Lubricates close-tolerance internal surfaces to increase chain life up to 300%. Highly recommended for all climatic conditions to stop rust and corrosion even in salt atmospheres.

Packaged in handy 16 oz. aerosol spray-on containers or in bulk—send for a free trial sample.



### ANTI-FRICTION COMPOSITIONS HAVE NO MELTING OR DROPPING POINT

Packaged in 14 1/2 oz. cartridges for handy application with lever-type cartridge guns for constant protection to roller, ball, sleeve bearings and sliding surfaces in "hot" bearing applications or in areas with high ambient heat. Exclusive formulas have no melting or dropping point; moisture resistant; will not wash out; exceptional metal adherence properties; temperature reducing qualities; high extreme pressure values. Available in two grades. Whitmore's Anti-Friction Composition No. 1 (light density), recommended for high speed, high temperature applications. Anti-Friction Composition No. 2 (heavy density), for low-speed high-temperature applications or loosely-fitted bearings. Specify No. when requesting free trial sample.

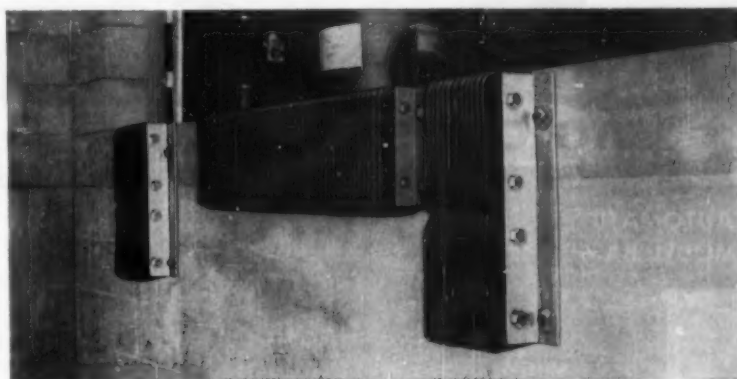
### 68 YEARS OF LEADERSHIP LUBRICATING THE FOLLOWING:

- Open Gears, Dipper Sticks, Cams • Open and Enclosed Chain • Speed Reducers
- Enclosed Gear Cases • Roller, Ball and Sleeve Bearings • Wire Rope and Cable
- Hydraulic Units, Torque Converters



Est. 1893  
**THE WHITMORE MANUFACTURING CO.**

LUBRICATING ENGINEERS  
CLEVELAND 4, OHIO • VULCAN 3-7272



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# INDEX TO ADVERTISERS

Albion Industries, Inc. .... 30	Equipto Div. .... 40	New London Engineering Co. . . 46
Allis-Chalmers ..... Cover II	Aurora Equipment Co. .... 40	Nutting Truck & Caster Co. .... 11
American Dockbridge, Inc. .... 2		
Aro Equipment Corp. .... 9		
	Dave Fischbein Co. .... 48	Potdevin Machine Co. .... 31
Bassick Co. .... 38	Hyster Co. .... 3	The Rapids-Standard Co. Inc. .... 12
Bigelow-Garvey Lumber Co. .... 35	Hytrol Conveyor Co. .... 26	The Raymond Corp. .... 8, 37
Brooks & Perkins, Inc. .... 32		Ready-Power Co. .... 41
E. W. Buschman Co. .... 32		Roura Iron Works, Inc. .... 39
	Industrial Handling Equipment	Rowe Methods, Inc. .... 38
	Co. .... 45	
Cady Metal Fabricating, Inc. .... 41		Stanley Works ..... Cover III
Canton Stoker Corp. .... 34		
Chisholm-Moore Hoist Div. .... 6	G. B. Lewis Co. .... 39	
Crown Controls Co. Inc. .... 26		Towmotor Corp. .... 5
		Travelift & Engineering, Inc. .... 10
Diagraph-Bradley Industries, Inc. 40	M-B Corp. .... 42	
Dico Co. .... 43	Magline Inc. .... 31, 41, 43, 44, 45	Weber Marking Systems, Inc. .... 1
Divine Brothers Co. .... 35	Magnesium Co. of America .... 26	Witmore Mfg. Co. .... 47
Durable Mat Co. .... 47	Martin-Decker Corp. .... 42	Wire & Iron Products .... 44
	Modern Light Metals .... 46	
	Moto-Truc Co. .... 7	
Electrolift, Inc. .... 43	Motor Generator Corp. .... 36	Yale & Towne Mfg. Co. .... 33

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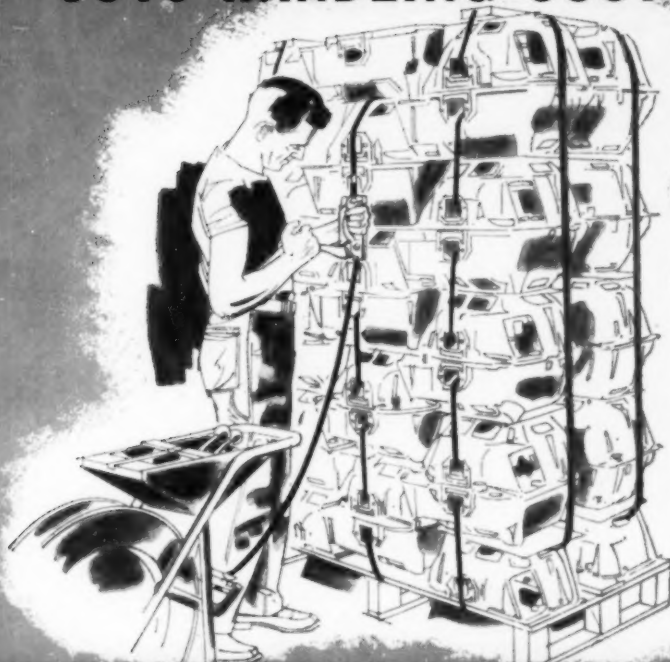
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